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BARODA BY DECADES

1871-1941

FOREWORD BY

SIR V. T. KRISHNAMACHARI, K. C. I. E.
Dewan, Baroda State.

1942] [Rs. 2-0-0

Hardoi 3.8.43.

His Late Highness the Maharaja Sayajirao III.

P.T.O.

Died at the age of 76 years
i.e. at 8.45 P.M. on 6th February
1939 at Bombay. [See cuttings
from "The Statesman" of 8.2.39
kept in my Home Library Club
book "One Hundred Great Lives"

A GREAT INDIAN

2-11-48

Sir,—It is refreshing to [illegible] that the Governor-General publicly declared in Baroda that Maharaja Sayajirao, one of the greatest Indians of the last century was the first ruler who opened temple doors to untouchables. Long before Mahatma Gandhi advocated the reform, or the State of Travancore effected it, Sayajirao, in a memorable order, directed that all State-controlled temples in the State of Baroda should be accessible to all Hindus, irrespective of caste. The order ended with his remark—"We are all children of God."

I noticed, when I was Dewan of Baroda, that Sayajirao's order was [illegible]ously obeyed throughout the [illegible]. It is gratifying that justice has [illegible]e to the memory of the great [illegible]ours, etc., B. L. MITTER.
Calcutta, Oct 26.

The Statesman, dated 2-11-48

FOREWORD.

I have much pleasure in introducing to the public Mr. Shah's brochure "Baroda by decades 1871-1941" which attempts to sketch in broad outline the achievements of a great Ruler who was in every sense the maker of modern Baroda. The book is very clearly written and brings out clearly the main trends of development. I am sure it will be widely read and appreciated.

'Dilaram', BARODA,
8th July 1942.

V. T. Krishnamachari.

Hardoi 3-8/43

His Highness the Maharaja Pratapsinh Gaekwar.

PREFACE.

The long and eventful reign of His late Highness Sayajirao III, extending over sixty four years, has transformed the State of Baroda from a medieval state into one of the most modern and leading states of the present day India. This process of evolution lies unfolded in parts in the form of vast material contained in administration reports, departmental reports, census reports and reports of special committees. The process continues with the same vigour in the present regime of H. H. the Maharaja Pratapsingh also.

It was some two years back that I felt myself interested in the reading of this vast material which has now resulted in this attempt to narrate the story of Baroda's economic progress during the last seven decades.

There is another motive also. Much has been written about diverse topics of progress in Baroda State, but my studies led me to view the administrative experiment of Baroda as a whole and assess the acquisitions by decades. I saw in a perspective the significance of and co-relation between various ameliorative processes set in motion and thought that in the interest of general readers, I should publish my study and interpretations in a coherent and compact way, allowing figures for the most part to speak for themselves.

The material available in various official documents of Baroda State is very vast and of varied interest. I have necessarily restricted myself to the fuller exposition of the selected topics pertaining to the present economic structure of the state than to the historical narration of minor details.

I must express my sense of gratitude to Mr. R. V. Desai for having gone through my manuscript and for making valuable suggestions which by their incorporation have added to the value of the book. I am also grateful to Dr. J. M. Mehta and Prof. D. Ghosh who took a kindly interest in my study and gave useful suggestions. My thanks are also due to Mr. R. G. Allan and Mr. T. M. Desai for having gone through the portions on Agriculture and Cooperation respectively.

My hope is that this study will be of use to both the officials and non-officials interested in the progress of Baroda that has created a unique tradition of progress, efficient administration and a distinct sense of the identity of interest between the ruler and the ruled. The uptodate past studied in this work may show how the future is likely to be shaped.

Seminar of History and Economics
The College, Baroda.
14th July, 1942.

M. H. Shah.

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Hardoi 3.8.63

Sir V. T. Krishnamachariar K.C.I.E.

CHAPTER 1

HISTORICAL RETROSPECT

The Gaekwars in Baroda :—

THE history of Modern Baroda is closely associated with the rise of Marathas under the great Indian leader Shivaji. The Maratha power soon spread its dominions beyond the Deccan and made it into a powerful confederation that rivalled and ultimately undermined the Moghul Empire.

The founder of the present Ruling house in Baroda was Damaji Rao Gaekwad I who was one of the greatest soldiers of the Maratha kingdom. His nephew Pilaji Rao succeeded him in 1721 and established himself at Songadh in 1723. His son Damaji Rao II captured Baroda in 1734, since which date it has remained under the Gaekwars.

His successors were for a long time occupied in resisting the demands of the Peshwas, and at the same time in expanding the boundaries of the state. The process of expansion and consolidation of the Gaekwar's rule continued under several noted Rulers of whom the most important are Sayaji Rao II, Ganpat Rao and Khande Rao.

In Ganpat Rao's reign (1847-1856) infanticide and the sale of children was prohibited, and the land for B. B. & C. I. Railway was ceded to the British Government. Khande Rao's reign (1856-1870) is memorable for the service he rendered to the British at the time of the Mutiny, for a number of fine public buildings, for the construction of the first railway line in the State, and for the reforms which brought regularity in administration of justice and of land revenue.

The underlying trend of the political growth in Gujarat at this time was the increasing association of the Gaekwar's with the British Rule which was very definitely spreading itself throughout India. Thus in 1802, 1805 and 1817, the State entered into an offensive and defensive alliance with the British Government. This alliance continues even to-day.

Upto 1870 affairs of the State went on without any hitch. But rapid deterioration set in during the short period of five years of Malharrao's rule which ended in 1875.

We find that on the eve of the new administration that began in 1875, the records of the State were in absolute state of confusion, the evil system of farming out land revenue was in vogue, scant attention was paid to the education of the subjects and the whole administration required comprehensive reorganisation.

Reforms and modernisation :—

It was on this background that the new structure was to be raised. The period of reconstruction began in the year 1875 A. D., when Maharani Jamnabai, the widow of His Highness Maharaja Khanderao, adopted His Highness the late Maharaja Sayaji Rao III.

The period between 1875 A. D. and 1881 A. D. was a period of minority for the new Maharaja, and the State was entrusted to the care of an eminent Indian Administrator Raja Sir T. Madhav Rao, who assumed the duties of the office of the Minister on 10th May 1875.

Sir T. Madhav Rao ranked amongst the leading statesmen of India and he carried out the work of the State, fulfilling the expectations both of the Ruler and the ruled. The six years of his administration saw the reform and reorganisation of the administrative machinery. "At the end of these six years, new condition of things had been created. The relation between the Native State and the Paramount Power became sensible for the first time. The finances had been restored to a healthy condition. Order and publicity had taken the place of confusion and concealment. The revenue system was started where there was no system and the land taxes as well as the other taxes were beginning to be ascertained."*

Beneficient Rule :—

Thus the foundation was laid for the future edifice which was built up by His late Highness Sayaji Rao III. It will be no exaggeration in any sense if we say that His Highness Sayaji Rao was the Maker of Modern Baroda. It is his vigorous and enlightened administration that has clothed Baroda into its present glory. The sixtyfour years that this remarkable Ruler was on the throne is the golden period in the history of Baroda State. His works are so wide and deep that they will require volumes to be narrated.

---

* Vide Elliot's Gazetteer of Baroda State.

Born in 1863, he was installed on the throne on 27th of May 1875. He was the fourteenth ruler in the line. When he was installed he was only twelve years of age. It was in the year 1881 that he was invested with full powers. Let it however not be supposed that the growing young Maharaja was inattentive to the work of administration during his period of minority. He studied and studied with zest and vigour all the intricacies of State organisation and from day to day gave brilliant promises of the glory that was in future to be his. Under his benign and enlightened rule Baroda made phenomenal progress. Not only that he was a great statesman but he was also a great man and a profound scholar of international repute.

His achievements were numerous : a scientific system of land revenue and survey was introduced, great departments of State formed, social laws framed and enacted, compulsory and free education enforced, important programmes of rural reconstruction and industrial development carried out, the social services of the State extenoed, a net work of railways laid, the port of Okha developed, sound and stable finances organised, and above all a tradition of just and good government established.

His was the longest rule during which people of the State celebrated his three Jubilees,—Silver, Golden and Diamond. His death on 6th February 1939 caused worldwide sorrow.

Brilliant traditions maintained and enchanced :—

The glorious work of the training and uplift of the people of the State is now carried on by His Highness the Maharaja Pratap Singh Gaekwar, the present Ruler, who is the worthy successor of Shree Sayajirao of revered memory. He is a young ruler of very great promise.

Born on 29th of the month of June of 1908, he ascended the throne of Baroda on February 7th 1939. The famous message that he gave to his people at the time of his accession has endeared him to all the classes of his people. His training in the administration while he was the Yuvaraj, has been a great asset to those who have to carry on his administration.

Keen on the welfare of his subjects and sympathetic to the needs of the agricultural population, he, immediately after his accession to the throne, ordered a permanent reduction of Rs. 22 lakhs in the land revenue, donated a crore of rupees to perpetuate the memory of his distinguished grandfather His Highness Sir Sayaji Rao for creating a trust for various purposes connected with the betterment of the people, raised the limit of taxable income from Rs. 750 to Rs. 2000 and granted a reformed constitution with a Popular Minister and with a clear majority of the elected members.

He is a great sportsman and a great patron of art and learning. The creation of a foundation of a chair in Benares University for the studies of Indian culture is one of the many items that proves his abiding interest in cultural activities.

It is as certain as the daylight that the distinguished traditions of Baroda will not only be maintained but will be enhanced a great deal under his watchful and benign rule.

The hand that assists :-

In the arduous task of the administration and progress of the State, the contribution of Sir V. T. Krishnamachari. the present Dewan of the State, *is* certainly very great and as such should not be left unmentioned here. He is an all-India figure with a brilliant record of British service. He came to Baroda as the Prime Minister fourteen years ago and with exceptional zeel. acumen, liberal outlook and vigorous drive has maintained the brilliant traditions of progressive Baroda and enhanced its reputation.

There are many points of note in this connection. It is remarkable that his career as Dewan has been the longest for any individual Dewan in the history of the State, and this very fact speaks volumes about the esteem in which he is held, both by the Ruler and the ruled.

Still more remarkable is the fact that "The main movement towards better things in Baroda coincides with his appointment as the Dewan and takes place during his period of office."* Besides this, Sir V. T. Krishnamachari with his affable manners and smiles, is one of the most popular figures in the social life of Baroda, which very recently celebrated his 60th birthday.

The Executive :–

His Highness the Maharaja carries on the administration of the State with the help of the Executive Council, which is composed of four members, the Dewan being the President.

Each member is assigned a definite number of portfolios, in respect of which he is empowered to use the Dewan powers.

The popular Minister, who is appointed from the elected members of Dharasabha, is one of the four members of the Executive Council which affords him an opportunity of having a say on all matters of administration, and not only on his own portfolios. This is an unique feature of the new constitution of the State.

Trend of administration :—

The general trend of administration is one of increasing association of the people in the administration of the State.

With that purpose in view, Baroda State constituted a legislature as far back as 1908, when most, perhaps none of the Indian States, had any institution of the type.

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* 50 years of agriculture in Baroda by R. G. Allan.

The then Dharasabha was composed of 17 members. The number of members was increased to 26 in the year 1912 and at the end of January 1940, it was 31 of whom Dewan was the President, 5 were ex-officio members, 15 nominated and 10 elected by local bodies.

The success of the old Dharasabha encouraged both the people and the State to collaborate in the work of further political advancement. Early in 1938, the Government appointed a committee of officials and non-officials with very wide terms of reference to consider the lines of further constitutional advance. In December 1939, this committee presented a unanimous report and His Highness the Maharaja announced his assent to the recommendations of the Committee in February 1940.

New Dharasabha :—

The enlarged Dharasabha or the Legislature was set up by the Government of Baroda Act 1940. The Dewan is the ex-officio president of Dharasabha. There is also a deputy president "who shall until the expiration of three years from the first meeting thereof be a person appointed by His Highness and shall thereafter be a member of the Dharasabha elected by Dharasabha."* Besides the President and the deputy president, there are parliamentary secretaries who are appointed from among the non-official members of Dharasabha.

The present Dharasabha is composed of 60 members of whom not less than 37 are elected, 17 are nominated, and 6 are ex-officio members.

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* The Baroda Government Act, 1940.

Of the 17 members to be nominated, not more than 3 are to be officials, according to rules. But in their nominations to the present Dharasabha, the Government have included only one and not 3 officials, as prescribed by the rules. This is a clear indication of the spirit in which the Government are prepared to maintain the democratic tone of Dharasabha.

Of many noteworthy features of the new legislature, rejection of communal constituencies, establishment of the majority of elected members, appointment of an elected member of Dharasabha to the Executive Council, selection of deputy president and three parliamentary secretaries from amongst non-officials are some important ones.

In short, the new constitution embodied in the Government of Baroda Act 1940 is based primarily on the complete identity of interests between the ruler and the ruled and among all sections of the people. It is nearly two years that it was put into effect and so far the results have been very encouraging.

CHAPTER 2

THE ECONOMIC BACKGROUND

The territories of Baroda State lie scattered both in Gujarat and Kathiawar and are situated between 20·45' and 24·9' North Latitude and between 70·42' and 73·59' East Longitude. Okhamandal, a detached part of State territories, lies between 22·35' and 22·5' North Latitude and between 69·5' and 69·20' East Longitude.

No Compact Block :—

These territories do not form a compact block as those of Hyderabad and Mysore but they are interspersed with British Indian territories and territories of other Indian States. There are good historical reasons for the strange manner in which His Highness the Maharaja Gaekwar's dominions lie thus scattered over Gujarat and Kathiawar.

Natural and Political divisions :—

These territories fall within the following natural divisions :—(1) North Gujarat (2) South Gujarat (3) Central Gujarat (4) Okhamandal. But for the purposes of administration, they are divided into the following five districts :—(1) Baroda (2) Mehsana (3) Navsari (4) Amreli and (5) Okhamandal.

Area :—

The area of the State, according to the census of 1941, is 8176·12 square miles including the Pethapur tributary. It is not very extensive as compared with that of some other Indian States, e. g. Jodhpur and Bikaner in Rajputana, Gwalior in Central India and Mysore in Southern India. Of the total area of the State, 1933 sq. miles are covered by Baroda district, 1811 sq. miles by Navsari district, 3080 sq. miles by Mehsana district, 1071 by Amreli and 281 by Okhamandal. Again of the total area, 6454 sq. miles i. e. 80 per cent is devoted to agriculture, and 712·8 sq. miles or about 9 per cent is under forests.

Rainfall :—

The rainfall in the state amounts to an average of 34·9 inches in Boroda, 16·78 inches in Mehsana, 47·53 inches in Navsari, 17·53 inches in Amreli and 28·69 inches in Okhamandal. The rainfall is the highest in Southern district of Navsari and decreases towards the North in Gujarat, while it is least in the Kathiawar district of Amreli.

B. POPULATION

The total population of the State, according to the Census of 1941, is 28,55,010 souls. The population of Baroda City and each dtstrict of the State is as under :—

Baroda City	1,53,301	Mehsana dist.	11,80,541
Baroda district	8,06,115	Amreli dist.	2,06,543
Navsari dist.	4,65,923	Okhamandal	42,587

Religious denominations :—

Of the total population, Hindus form 89·8%, Muslims 7·8%, Jains 1·6%, Christians ·3% and Parsis ·2%.

Occupation :—

The chief occupation of the people is agriculture. The following table shows the percentages of the population occupied in different divisions :—

Agriculture and Pasturage	Industry and Commerce	Public force and administration	Profession and liberal arts	Insufficiently described and unproductive	Others
64·6	23·4	3·3	3·5	3·5	1·7

Literacy :—

The total number of literates according to the Census of 1941, is 652, 975. The percentage of literate population to the total population, therefore, comes to 22·9. It may be remembered that the literacy percentage for India as a whole is 12 only. Of the total literates, 482, 353 are males and 170.622 are females; thus giving 32·8 percent literacy for males and 12·14 percent literacy for females. In point of literacy Baroda occupies third place in the whole of India.

Density :—

The density of population for the whole State, according to the census of 1941, is 349 per sq. mile, but this is not uniformly found all over the State. Some parts are more thickly populated while the others have sparse population. Baroda district is fairly densely populated having a density ranging between 300 to 795 souls per sq. mile, Mehsana is having a densitv of between 300 and 464 per sq. mile, while Navsari and Amreli are thinly populated, with a density below 300 per sq. mile. Okhamandal has the lowest density ranging between 175 and 195 per sq. mile.

C. NATURAL RESOURCES

The prosperity of any State or country is mainly dependent upon the natural resources of the country. If the country has no proper natural resources, the people of that country will be required to put in more labour for attaining prosperity. The resources of Baroda State may be classified into (a) agricultural resources, (b) forest resources, (c) mineral resources, and (d) power resources.

Agricultural resources :—

As regards the agricultural resources, Baroda is favourably graced by Nature. Of the total area of 88,90,442 bighas, about 70,00,892 bighas are cultivable; of which 66,80,796 bighas are already occupied i. e.

nearly 95 percent of the cultivable area is under actual cultivation at present. The unoccupied cultivable area, therefore, comes to only 3,80,096 bighas. Almost all kinds of important crops are produced in the State. The following table shows the commercial importance of the various crops produced.

No.	Name of the crop	Production	Estimated value in lacs of Rs.
1	Cotton ...	1,96,171 bales	217·24
2	Tobacco ...	7,000 Tons	19·6
3	Rice ...	34,000 ,,	35·0
4	Wheat ...	23,000 ,,	19·31
5	Jowar ...	1,02,000 ,,	114·24
6	Bajri ...	89,000 ,,	87·22
7	Castor ...	3,500 ,,	4·16
8	Sesamum ...	...	4·5
9	Groundnut ...	15,707 ,,	13·74

Live Stock :—

Let us now turn to the supply of live stock which would give us a fair estimate of the volume of agricultural wealth of the State. The table on the following page gives the necessary details :—

Agricultural Cattle		Non-agricultural Cattle	
Bullocks	4,19,[illegible]00	Horses mares and colts	11,652
Cows	1,89 968		
Calves	1,26,691	Donkeys	25,881
Bulls	4,633	Mules	8
Buffoloes :—			
a. Male	8,254	Camels	6,397
b. Femal	3,44,766	Sheep	1,11,833
c. Young ones	2,09,844	Goats	2,69,674

Forest Resources :—

Of the total area of 8176·12 sq. miles, 712·8 miles are covered by forests in the State. Timber, tanning and dyeing materials, plants for drugs, oil seeds, fibre yielding plants, lac, tobacco and mahura flowers are some of the important forest products. It is learnt that the Industries Board of the State has undertaken a detailed survey of the forest materials in order to enable the State to utilise the forest materials for developing various industries. The report of the Board will throw further light on the abundant forest resources of the State.

Minerals :—

The Geological surveys made by Mr. Foote of the Madras Geological survey and Prof. Sambshiva Iyer in 1892 and in 1908-09 and 1921 respectively show that in the State there is hardly any valuable minerals found so far except the following :—

1. Metals-Iron
2. Chemicals-Iron pyrites, Bauxite, Seaweeds, Salts, Natural Soda, Fuller's Earth,
3. Glass and porcelain-Sandstone, Stone and China clay,
4. Cement material,
5. Stones-Marble, Granite, Basalt, Limestone, Agates.

Fisheries :—

Besides the above mineral resources, there are facilities for the development of fisheries. The fishery resources of Baroda State mainly relate to true fish—both marine and fresh water but they also include the Crustaceans and Molluscs; among the last are the Conches ond Oysters, the latter valued for the cheap pearls yielded.

Soils :—

Generally 3 kinds of soil are found in the State, the black soil, the gorat or sandy soil and besar or mixed soil. The soils in the Baroda State are mainly alluvial except in some parts of the Navsari district and in the North-east corner of the Baroda district.

D. AGRICULTURE

Agriculture in Baroda, as in the whole of India, is the main source of livelihood to the people and nearly 64 per cent of the total population depend upon agriculture.

We have already reviewed the agricultural resources of the State in the foregoing pages. It remains to say a word about the organisation of agriculture in the State. The centre of this organisation is the Agriculture department of the State which has been considerably expanded during the last few years. This department has started a crusade against lithargy and backwardness in agriculture. It has devised various schemes and is carrying out those schemes thoroughly. Farms and experiments, rural reconstruction centres, agricultural research and engineering, marketing and horticulture, soil and water analysis, agricultural propaganda and education are a few of the many activities of the department. Soil erosion menace is carefully investigated and dealt with. Great irrigation projects are undertaken by the Public Works Department of the State to free the agriculturists from the caprice of rain.

E. INDUSTRIES.

Baroda industries occupy a very important place among the industries of India, and the region covered by Baroda State now ranks amongst the most advanced industrial regions in India. It may be interesting to compare the industrial development of Baroda with that of Mysore which is regarded as the most industrialised State in India. Of the available standards of comparison, the number of workers engaged in factories is the most important one.

As compared with 37,143 operatives employed in factories coming under the Factories Act in Baroda State, Mysore with double the population of Baroda has only 49,330 operatives, employed in factories notified under the Mysore Factories Act and in gold mining companies. Another standard for comparison, though not so adequate, is the amount of paid up capital of companies working in the State. The total amount of paid up capital of Joint Stock Companies working in Baroda State is Rs. 2,45,25,442 as compared with Rs. 2,47,71,546 of those working in Mysore. The percentage of operatives to the total population is 1·5 in Baroda as compared to ·67 in Mysore.*

Cottage Industries :—

Special care is taken to develop the cottage industries of the State for the development of which a number of schemes have been introduced and experts are provided to teach handicrafts and to give demonstrations to artisans. A number of institutions such as the Government Model Farm, the Sayaji Science Institute, Industrial Schools, Rural Reconstruction Centres, and Diamond Jubilee Cottage Industries Institute are seen working in the State for the purpose The Diamond Jubilee fund, the Diamond Jubilee People's fund and the Sayaji Memorial fund with a total sum of about 2½ crores of rupees greatly augment the strength of the movement.

F. MEANS OF COMMUNICATIONS.

The utility of the means of communications is obvious. They form an important part of the economic structure of the State and facilitate trade and commerce. Railways, electrical appliances, roads, ports, and vehicles of all sorts are the most important means of communications. Baroda State is well provided with these various means of communications.

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* Figures for 1939-40.

Railways :—

The total mileage of railways owned by the State is 723 miles of which 21·42 miles are Broad-Gauge, 345·85 miles are Meter-Gauge and 355·73 miles are Narrow-Gauge. The Broad-Gauge section is worked by B. B. & C. I. Railway Company while the Okha Railway, a Meter-Guage section of 37·21 miles, is run by the Jamnagar and Dwarka Railway. The remaining lines are worked by the State. In comparison to the area and population of the State, Baroda State has the highest percentage of railway mileage in India.

Telephones :—

The automatic telephone systems exist in the Baroda City, Navsari, Bilimora, Petlad, Dabhoi, Kalol and Mehsana. All these are connected or are in the process of being connected with the trunk telephone system.

Roads :—

The State is also well served by roads. The total mileage of metalled and unmetalled roads constructed upto the year 1940 both by Public Works Department and by Panchayat agencies amount to 1712 miles thus giving a mile of road for every 5 sq. miles of the area of the State, and 0·64 mile of road per mille of population.

Of the total mileage of roads, 479 miles are metalled roads and 1233 miles are unmetalled roads. The following table shows the distribution of roads in each district of the State :—

Name of the district	Area in sq. miles	Miles of road
Baroda ...	1933	357
Mehsana ...	3080	236
Navsari ...	1811	596
Amreli including Okhamandal ...	1352	529

Ports:-

The territories of the State are mostly situated inland, except at a few places in Kathiawar and Gujarat. There are four sea ports-one at Rupen in Okha, the other at Mul Dwarka in Kodinar, the third at Beyt in Okha and the fourth at Velan in Kodinar.

Of these the former two are fair weather ports and most of their trade is local. The port at Beyt in Okha has been fully developed and as will be seen in the chapters on industries, has consideradle ocean trade.

There are only two important river ports, viz. Bilimora and Navsari. Before the advent of the railway the importance of these ports was very great but now they are almost neglected.

G. EDUCATION

More than anything else, Baroda is famous for its achievements in the field of education. The education department of the State includes in its orbit thousands of schools, several colleges, the Kala-Bhavan Technical Institute and the district industrial schools, the Teachers' training institutions, the Boy Scout Organisation, Physical Training centres, Museum and Art Gallery and such other institutions.

Number of Institutions :-

There are at present 2320 primary schools and 139 secondary schools over and above the many special institutions mentioned above. The total number of institutions of all kinds comes to 2,504 with 2,98,063 scholars studying in them. Of the total number of children of school going age, 86% are under instruction.

Expenditure:-

The expenditure of the education department is Rs. 39 lakhs, which is 18% of the total expenditure of the State. It will be instructive to see what the other States and the Provinces of India spend on education. Thus, for example, education gets a share of only 12 per cent from the total expenditure of Central Provinces, 11·3 per cent in Bengal, 15·2 in Madras, 15·1 in the Punjab, 14·6 in Bombay, 10·9 in Mysore, and 11·08 in Hyderabad.

Special features:-

Special attention is devoted to female education, to the education of the backward classes, and to adult education. The Baroda Census of 1941 shows that literacy amongst women has increased by 114.2 per cent during the decade 1931-41. The earliest introduction of free and compulsory system of primary education has given to Baroda a place of pride in the whole of India. It was introduced as early as 1893 and made permanent in the whole of the State in 1906. Again in 1938 compulsory physical training was introduced in the whole of the State.

H. MEDICAL FACILITIES

Baroda is not behind the other Indian States or British Indian Provinces as regards its care for the health of its subjects. Here on the contrary, it occupies a very prominent place. We may allow the following table to speak for itself.

Name	Area in sq. miles	Population in lakhs	No. of medical units	Proportion of medical units to area	Ratio of medical units to population	Per capita exp.	Ratio of patients to pop.
Bombay	77,221	208·58	428	1 : 180	1 : 48,598	0-4-9	1 : 5
Bengal	77,521	603·14	2,111	1 : 540	1 : 28,5[illegible]4	0-2-1	1 : 5
Madras	1,12,277	49[illegible]·42	1,32[illegible]	1 : 126	1 : 3[illegible],779	0-2-9	1 : 2¼
U. P.	1,06,248	550·21	686	1 : 178	1 : 80,175	0-2-7	1 : 6
Punjab	99,200	284·19	968	1 : 102	1 : 29,240	0-3-5	1 : 2
Kashmir	84,471	40·21	9[illegible]	1 : 908	1 : 43,236	0 2-8	1 : 2¼
Mysore	29,326	73·3	337	1 : 94	1 : 21,750	0-4-4	1 : 1¼
Travancore	7,625	60·7	87	1 : 87	1 : 69,770	0-2-8	1 : 2
Cochin	1,489	14·2	57	1 : 24	1 : 24,912	0-6-6	1 : 1¼
Gwalior	26,367	39·9	141	1 : 187	1 : 28,298	0-2-3	1 : 3
Hyderabad	82,698	161·8	150	1 : 551	1:1,072[illegible]	0-2-6	1 : 5
Baroda	**8,164***	**28·55**	**346**	1 : 24	1 : 8251	0-4-6	1 : 2

* Excluding Pethapur tributary.

From the study of the figures given in the administration reports of various States and Provinces, it appears that aided institutions are also included in the total number of medical institutions in respective States and Provinces. Hence the number of village organisations aided by Baroda State have also been included in the table. Even if the village dispensaries in Baroda State are left out of consideration, it seems that conditions in Baroda are more favourable than those in any of the British Indian provinces or Indian States except in Cochin. The figures in the above table indicate that with the exception of Cochin, Baroda stands almost above all in respect of the following points :—

(1) Number of medical units per sq. mile.
(2) The ratio of medical units to population.
(3) The expenditure on medical organisation per head of population.
(4) The ratio of persons treated to population.

Economic condition of the people :—

It must be evident from the foregoing outline of the present economic structure of the State that the people of the State are economically fairly well up. The occupational distribution discloses that agriculture still continues in its primacy of place in the occupational fields though it has slightly contracted during the decade 1931-41. According to the Report of the Revenue Department of the State, the average income per Khatedar in the year 1931-32 was Rs. 195. The same now ranges between Rs. 109 and Rs. 422, the average being Rs. 196. According to Dr. V. K. R. V. Rao the agricultural income per worker engaged in agriculture in the year 1931-32 in Bombay was Rs. 173, in Bengal Rs. 134, in Madras Rs. 108, in Punjab Rs. 84, in C. P. Rs. 67, in U. P. Rs. 74, and Rs. 87 in Bihar and Orissa.

The prosperity of the people both in urban as well as rural areas of the State can also be judged from movement in money and property in the State. The aggregate value of property that passed through registrars in 1939-40 by way of mortgages, sales, wills, etc., was Rs. 2,60,38,974 as against Rs. 2,67,45,578 in the previous year.

During the year 1940 the people's savings in the Bank of Baroda amounted to Rs. 4,90,80,355 besides Rs. 2,51,69,863 in fixed deposits.

Deposits and loans to the extent of Rs. 11,80,442 from non-members, Rs. 17,43,193 from Societies and Banks and Rs. 30,24,694 from members were made in various Co-operative Societies during the year 1939-40. The total working capital of these Societies stood at Rs. 1,01,98,524.

Thus the total deposits in Bank as well as in Co-operative Societies amounted to about Rs. 8·1 crores.

The quantity of import and export trade of Baroda State by rail as well as by sea amounted to 39·0 million mds., the imports being 23·9 million mds., and the exports 15·1 million mds.

The total income of the municipalities for the year 1939-40 excluding Government grants and local cess contributions came to Rs. 18,45,169 of which the income from the municipal rates and taxes was Rs. 15,54,241.

The village panchayat demand amounted to Rs. 3,95,531. The Government gave a subsidy of Rs. 22,360 which is equal to half the amount that the panchayats raised by way of taxation and contribution.

The sale of electrical energy rose from 50,44,950 units in 1938-39 to 55,07,312 units in 1939-40. Supply mains were extended in the rural areas round about Baroda like Tandalja, Akota, Atladara, Samiyala, Wasna, Shevashi, Vasud, Gotri, Bhaili. Manjalpur, Jambuva etc., for irrigation and agricultural purposes and nearly 190 pumping sets were installed for irrigation purposes.

It is evident from these figures that the economic condition of the people is comparatively satisfactory and that there is a steady improvement in the same.

CHAPTER 3

POPULATION

✧

The present population of the State is 28,55,010 souls according to the Census of 1941 of which 14,72,909 are males and 13,82,101 are females. The following table gives us an idea of the place which Baroda occupies among the various important Indian States and British Indian Provinces from the view point of population and area.

Table showing area and population.

Name of the Province or State	Area in sq. miles	Population in 1941 (in lakhs)
Bombay	77,221	208·58
Bengal	77,521	603·14
Madras	1,42,277	493·42
Punjab	99,200	284·19
United Provinces	1,06,248	550·21

Mysore	..	29,326	73·3
Cochin	...	1,489	14·2
Travancore	...	7,625	60·7
Gwalior	...	26,367	39·9
Hyderabad	...	82,698	161·8
Baroda	...	**8,176**	**28·55**
Kashmir	...	81,471	39·4

The proportion of area to population brings out the fact that Baroda is one of the most densely populated places even among the several thickly populated parts of India.

The first census in Baroda :—

The available sources do not permit us to go back beyond 1872; in which year the first regular census of the modern type was taken in Baroda. But the census of 1872 was not synchronous with the rest of India. It was only in the year 1881 that a regular and orderly census was taken in Baroda exactly at the same time with that of British India.

Variations in population from 1872 to 1941 :—

According to the census of 1872, the State had an area of 4,399 sq. miles and a population of 19,97,598 souls. To-day the population is 28,55,010 souls on an area of 8176 sq. miles. This shows that the population has increased by 38% during the last 70 years, which gives us a decennial increase of only about 5½%. But this increase is not uniform. The following table shows the census varations since 1872.

Year of Census	Population	Percentage of variation since the previous Census
1872	19,97,598	
1881	21,83,158	+ 9.24
1891	24,15,396	+ 10.68
1901	19,52,692	- 19.15
1911	20,32,798	+ 4.1
1921	21,26,521	+ 4.6
1931	24,43,007	+ 14.8
1941	28,55,910	+ 16.6

This increase is spread over the districts of the State in various proportions. South Gujarat or Navsari district records the greatest advance, the population having then grown by about 70 per cent. Kathiawar or Amreli district has gained by about 65 per cent. But central Gujarat or Baroda district has advanced only by 30 per cent while North Gujarat or Mehsana district has advanced by 39 per cent.

The forces behind the variations :—

From the above table we find that the population of the State has shown some increase every decade excepting in the decade 1891-1901.

1872 to 1891 :—

Upto 1891, the population of the State showed a continual increase. From 1872 to 1891 the population rose by 20%. Such a phenomenal growth is accounted for by the following reasons.

1. Better enumeration.
2. The sudden development of the State.
3. Favourable balance of migration.

We have already seen that the census of 1872 was not very accurate. It is therefore natural that some part of the increase in the population might be the result of better enumeration at the subsequent censuses of 1881 and 1891. At that time there was no act in the State requiring persons to report births and deaths. Rules for Baroda City came into force in 1901. Previous to this in villages patels and in kasba towns the police registered births and deaths and talaties sent a monthly return from these registers to the taluka Vahivatdars and Mahalkaris, who tabulated a return for all the villages and towns of the taluka or peta mahal and submitted it to the Sanitary Commissioner, in whose office births and deaths for the whole of the State were compiled. It is, therefore, certain that some part of the increase was due to more accurate registration.

The exact figures of the balance of migration during the decade 1872-81 are not available. But the same during the next decade i. e. 1881-91, was 8242 souls i. e. 8·75 per mille in favour of Baroda. Thus favourable balance of migration was another cause causing the rise in the population of the State during the two decades, 1872-81 and 1891-91.

But the real cause of increase lies in the sudden economic and social transformation that came over the State as a result of the enlightened and the foresighted policy of the new ruler, His Highness the late Sayajirao III who assumed the full powers of a ruler in 1881 and set his heart on the welfare of his people.

1891 to 1901 :—

During the decade 1891-1901, there was a great decrease of 19.15% in the population which was mainly due to adverse seasonal conditions, defective rainfall, and the plague and the famine of 1899 that obtained during the decade 1891-1901, when the registered number of deaths rose from 42,000 to 131,261 annually. The Gujarat calamities like plague and famine could not but leave their scars as they did on Baroda population. But for this set back, the increase in the population of the State would have kept pace with the increase of population in India and parts of India. The population of India rose by 39% between 1881 and 1931. During the same period the population of the State increased only by 12%. The gulf of difference between the increase in India and in Baroda is the result of the great decrease in population in Baroda during 1891-1901, when the population decreased by 19.15. Had the population increased at the average rate of growth, which was then 9%, we should have got 28·15 (19·15+9) percent more during the decade 1891-1901 and the total increase between 1881-1931 would have been 40·15, nearly the same as that of India.

1901 to 1921 :—

From 1901 to 1921 the population increased by about 8 7%. As compared to the earlier decades, 1872-1881, 1881-1891, this progress is meagre. The earlier decades showed a decennial progress of 10% while these later decades show a decennial increase of about 4% only. The period between 1901-1921 was not one of normal growth, owing to adverse seasonal conditions, plague and influenza.

1921 to 1941 :—

The last decades 1921-1931 and 1931-1941 again show a rapid growth of population which increased by 14.8% during the decade 1921-31 and by 16·6 percent during that of 1931 1941. Explaining the increase during the decade 1921-1931,the Census Commissioner, Mr. S. V. Mukerjea wrote : "The volume of births declined from 898060 in 1911-21 to 870620 but owing to the healthier conditions of living. the number of survivors increased from 71316 to 190620."Again to quote from Census 1941, "In the next decade (1921-31), however no epidemics were in evidence, but seasonal conditions still continued to be unpropitious, what with floods and frost, locusts and poor monsoons, and towards the end of the decade, a steep decline in prices. Nevertheless the processes of enlightened administration worked vigorously for the benefit of the people," resulting in an increase of 14·8%. The record increase of 16.6% during the decade 1931-41 is an eloquent testimony to the improved social and economic conditions of the State. "The decade under consideration was remarkedly worse than the previous one in every part of the State. In spite of these adverse conditions, the census of 1941 showed a remarkable increase of 16.6% percent, quite the largest rate of growth since 1872, and the reasons for this record increase must be sought for elsewhere"*—in improved conditions of life.

Growth of population elsewhere :—

Let us now study the growth of population in the various Indian States and important British Provinces of India.

Name of the Province or State	Increase from 1881 to 1941	Name of the Province or State	Increase from 1881 to 9141
India ...	54	Mysore ...	68·4
Bombay ...	48·7	Cochin ..	118·8
Bengal ...	8.5	Travancore ...	131·1
Madras ...	63·2	Gwalior ...	27·9
Punjab ...	59·6	Hyderabad ...	58·7
United Prov...	24·2	Baroda ...	28·6

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* **Baroda Census Report, 1941 by Mr. S. V. Mukerjea.**

From the above table we find that the population of Baroda has not increased as much as the population of the Indian States and British Provinces of India, owing to reasons already mentioned.

Variations in Density :—

We may now consider the variations in the pressure of population or Density. According to the Census of 1941, the area of the State being 8176·12 sq. miles and the population being 28,55,010 souls, we find that each square mile supports 349 souls in Baroda. The following table gives an idea of the densities of the various Indian States, British Indian Provinces and some foreign States.

(Figures according to 1931)

Name	Density per sq. mile	Name	Density per sq. mile
India ..	195	Travancore ..	668
Bombay ..	177	Gwalior ..	134
Bengal ..	646	Jaipur ..	169
Punjab ..	238	Bhavnagar ..	168
Madras ..	328	Hyderabad ..	175
Mysore ..	224	Indore ..	138
Cochin ..	814	Baroda ..	299

Thus we see that Baroda is fairly densely populated in comparison with other parts of India. At this stage

it will be instructive to study the variations in the density during the last 70 years.

Density during the different decades

Year	Density per sq. mile	Increase or decrease per cent
1872	246	
1881	269	+ 9·3
1891	298	+10·68
1901	241	-19·5
1911	204	- 3·99
1921	261	+ 4·66
1931	299	+14·85
1941	349	+16·6

Thus we find that during the last 70 years, density in Baroda has increased by 42 per cent, which has been made possible by the fairly rapid development of the resources of the State.

The other factors :—

It is not only the numerical strength or high density that should count; because indiscriminate rise in population is hardly an indication of prosperity. Indeed the gradual increase in number is a test of the prevailing beneficial conditions mentioned above. But we should take into consideration other factors like the birth and death rates, the proportion of active population, literacy etc. which give strength and shape to the population of the country. It will be seen from the discussion that follow that the births have increased and the ratio of death, barring certain periods, has decreased. Educational, sanitary and medical facilities have definitely played their part in giving shape to the population of the State.

Literacy :—

It need not be pointed out again that literacy is the hallmark of progress and strength of the population. We may here, therefore, trace the growth of literacy in Baroda State through the various decades. In this case, it may be remembered that British Indian Provinces had an earlier start owing to the settled British regime while in Baroda upto 1871 there was no education department and no State managed educational institution. It was only in 1871 that for the first time the State started primary schools, two Gujarati and two Marathi in Baroda City. His Highness the late Maharaja Sayaji Rao understood the deep implications and value of literacy and he made the beginning by introducing in 1893 compulsory education in Amreli district and later on extending it to the whole of the Stale. As a result of his sustained and intensive efforts, to-day Baroda has outpaced all the British Indian Provinces and most of the Indian States in point of literacy, as is seen from the following figures of literates per mille in various parts of India.

Name of the State	Literates per mille of the total population	Name of the State	Literates per mille of the total population
Travancore ...	477	Bengal ...	161
Cochin ..	354	Madras ...	130
Baroda ...	**229**	Mysore ...	129
Bombay Presidency ...	195	Central Provinces ...	114
		Assam ...	113
Gujarat States ..	82	U. P. ...	84
		Gwalior ...	74
Western India States ..	146	Hyderabad ...	69
		Kashmir ...	66

Between 1891 and 1941, literacy amongst males increased from 10·89 to 32·8 and that amongst females from 0·39 to 12·14 in 1941.

The total number of educational institutions which was only 4 in 1871, has now reached the figure of 2,504 and the percentage of pupils under instruction to the population of school-going age of villages having primary schools has reached 89·2.

There is not the slightest doubt that these magnificient results are the concomitants of the liberal attitude of the State and the working of the compulsory system of education. India has yet to take a leaf out of Baroda's book in this matter.

Literacy Campaign:—

This policy of educating people of the State is vigorously pursued by the present Maharaja also. Not only that but in May 1939, he ordered the organisation of literacy campaign with an aim to impart literacy to the adult population of the State and thus to stamp out illiteracy from the State territories.

Adult education classes were first started in Amreli– the district where compulsory education was first introduced but now they are found working all over the State.

From the inception of literacy campaign till the end of July 1941, the total number of classes conducted is 1795. In all 26457 adult illiterates attended these classes and out of them 9861 have been successful in attaining the literacy standard fixed by the State. Of the remaining 16596 illiterate adults, 12978 have left the classes, without reaching the literacy standard, and 3618 are still attending the classes to acquire literacy.

Last but not the least is the provision against the lapse of new adult literates as well as literate children into illiteracy owing to the lack of facilities of using their powers of reading and writing. A committee has therefore been appointed to examine the question of preparing suitable literature for the newly made literates and to explore all the possibilities in this connection. A detailed scheme about the preparation of such literature is also being worked out.

Libraries :—

The village and town libraries also play a very important part in maintaining literacy standards once acquired. In fact at the end of several years' experience of compulsory education in Baroda State, it was found that a boy or a girl who has passed fifth standard vernacular lapses into illiteracy within a few years unless he or she gets opportunities of continuing to read books.

The Government, therefore adopted a policy of providing with a library, every village where there is a school, the help given by the Government and the district boards in each case being equal to the contribution raised by the village. For annual expenses, Government gives a grant equal to the contribution raised by a library. With this object libraries in the district receiving Government grants are grouped in three classes determined by the amount of maximum grants. District libraries receive up to Rs. 700, town libraries upto Rs. 300, village libraries up to Rs. 100 provided an equal amount is raised by the libraries. The mahila and children's libraries receive grants on the basis of village libraries and reading rooms receive upto Rs. 50. Since 1934 every year fifty new libraries are established.

During the year 1940-41, there were 1502 libraries in total, of which 46 were district and town libraries, 1270 were village libraries, 18 were libraries for females, 12 were children's libraries and 156 were reading rooms. These libraries serve 82·6 percent of the total population of State, town population being served to the extent of 100 percent and village population to the extent of 78·27 percent.

Travelling Libraries :—

Mention must here be made of 'Travelling Libraries' specially designed to meet the needs of those areas which have no libraries at all or whose libraries do not contain certain books required by particular readers.

The Country Library section, as it is called, has a travelling library with a stock of 18,000 volumes. A travelling library consists of a wooden box, containing from 15 to 30 books and is made strong enough to withstand hard wear. These boxes are despatched free of charge to any library or school or in fact to any responsible body of persons or person who undertakes to distribute the books in his locality. Even the freight both ways is brone by the department. Some of the books are termed fixed sets and contain books on a given subject, such as Agriculture, Bee-keeping· etc; others are selected as being suitable to a particular class or grade of readers; others again contain books by a particular author. Collections may however be made to meet the varying requirements of a particular locality. During the year 1940-41, this section circulated 26778 books among 10,384 readers by sending out 622 boxes to 375 centres.

The problem of illiteracy has been solved in many of the countries of the world with the help of one or the other of the agencies mentioned above and 90 to 100 percent literacy has been secured.

Baroda has also, by the adoption of these measures been able to record good literacy progress during the last few decades and with the help of these measures, it marches with full swing towards complete literacy.

CHAPTER 4

THE ROLE OF AGRICULTURE

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General :—

The prosperity of the States and the Provinces of India, their industry and their trade, even the stability of their Governments rest on the prosperity of Rural India, for agriculture to-day as in the past is the main occupation of the people of India. "In quite a Physiocratic fashion the mass of the Indian people attribute to the soil almost exclusive productive capacity and other industries appear to them as more or less parasitical. This is but natural in a social economy in which agriculture predominates, and the deep attachment of the people to the soil is thus accounted for."

Agricultural population :—

In Baroda State 64·4 per cent of the total population derive their livelihood from agriculture. In South Gujarat or Navsari district of the State, the percentage of the people depending upon agriculture rises as high as 80. The marginal table on the following page shows the percentage of population dependent upon agriculture in Baroda State during the various decades.

This shows that the population dependent upon agriculture has increased consistently excepting in the decades, 1891-1901 and 1931-41 when there was a fall of about 6 per cent every time. This is due to the great famine of 1899. "The census of 1901 was preceded by great famine which led many to relinquish agriculture to turn to the other means of subsistence," writes the Census Commissioner of 1911. The figures for 1941 indicate a happy tendency of the withdrawal of population from agriculture and to that extent expansion of industry, transport and commerce.

Year	Percentage
1891	57·05
1901	51·9
1911	63·4
1921	66·4
1931	71·7
1941	64·4

If we take the figures even for the whole of India, we find the same result i. e. the increase in the population dependent upon agriculture from Census to Census. The fact of the increase of population dependent upon agriculture is of great economic significance. While in other countries of the world the pressure of population on agriculture is gradually decreasing owing to the growth of industrialisation, in India the reverse is the case. Moreover agriculture in India is not a paying profession and if there is an increase in the population dependent upon agriculture, it would mean ruination of India, unless this condition is now counteracted by swift industrialisation or the rapid buttressing of the rural industries.

There are various explanations for this phenomenon. It has its bright side as well as the shadowy one. According to certain Economists, 'the increase in the number of agriculturists may be taken as indicating that the profits of agriculture were such as to attract workers from other occupations to agriculture.' The second explanation of this increase in the number of agriculturists lies in the decay of old handicrafts and consequent flocking of the people to agriculture. The increase in the cultivable land has also its quota in increasing the percentage of people dependent upon agriculture. With the growth of population, forests have been cleared up for cultivation and the increasing amount of people have been drawn towards this newly reclaimed land.

Whatever may be the reasons behind this phenomenon, it is certain that the majority of people in India devote themselves to agriculture. Consequently agriculture plays an important part in the social, economic and political structure of India. Agriculture being the occupation of the majority of the people, life of the majority is bound to be rural with its manifold complicated problems.

Rural and Urban population :—

Rural India is thus the real India and proportion of rural to urban population is so high that it has been considered as abnormal. The proportions of the urban* population per mille are 132 in U. P., 44 in Bihar and Orissa, 73.5 in Bengal, 109 in the Central Provinces, 130 in the Punjab, 135 in Madras and 224 in Bombay which is the most urbanised of the Provinces. In Baroda the proportion is 214 per mille. The Census 1941 puts the urban population at 252 per mille in Baroda State. England and Wales have 800 per mille and France has 508. This shows what little part agriculture plays in the national economy of those countries as against the outstanding part it plays in the national economy of India.

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*Figures for 1931.

Agriculture and Land Revenue :—

Politically agriculture is of great importance to the Government as a source of the greater portion of its revenue.

The contribution of land revenue to the total receipts* ranges from 25 to 55 percent in different States and Provinces of India. The lowest percentage of contribution by land revenue is found in case of the Punjab where land revenue forms 25·4 per cent of the total revenue. Next comes Bengal where 31·2% is. contributed by land revenue to the total revenue of the province. This low percentage is evidently the result of Lord Cornawallis's Permanent settlement. In case of U. P., it is 51.8, in Madras it is 44.1 and in Assam, it comes to 44·9. The highest percentage is found in case of Central Provinces where 54.05 per cent of the total revenue is drawn from land revenue. The neighbouring province of Bombay draws 38.9 per cent of its total revenue from land. In case of Baroda, land revenue contributes 34% per cent to the total revenue of the State. Therefore Baroda's land revenue receipts when compared to those of the other Provinces and States cannot be called higher. In this case it may be noted that Baroda's percentage is even lower than that of Bombay with which Baroda territories are almost interwoven.

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* Figures for 1934–35

Looking to the percentage of population dependent on agriculture, its concentration in rural areas as against commercialised and industrialised urban zones and the important part land-revenue plays in making up the total revenues of the provinces and the states, the role of agriculture stands out prominently in the Indian body economic and politic. Its predominance in India makes India essentially a rural country with all the concomitants of rural life, its large contribution to the State exchequer gives it a great importance in politics and the dependence of the majority of our people on it for livelihood and of our industries for their raw materials constitutes its economic importance. Above all, :"Agriculture is not merely a way of making money by raising crops, it is not merely an industry or a business; it is essentially a function of service performed by private individuals, and farmers in the course of their pursuit of a living and a private profit are the custodians of the basis of the national life."

CHAPTER V

DEVELOPMENT OF AGRICULTURE.

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The development of agriculture may be either extensive or intensive. By extensive development of agriculture, I mean the extension of agriculture over a larger and larger area. In the beginning of society the most fertile and easily cultivable land are taken up for cultivation and human settlements are established somewhere near those lands. But as the pressure of population increases, it becomes necessary that more and more land should be brought under cultivation even if that land is not fertile because then it is not a question of fertility but of the means of subsistence. Let us assume that the first class land yields a maund of corn as the result of ten hours' work the corn selling for ten rupees a maund. In order to supply a population that is increasing, land of the second class has to be cultivated, when the production of a maund requires fifteen hours' work. The value of corn will rise proportionately to fifteen rupees. The time for cultivating land of third class will soon approach, when twenty hours' labour will be necessary for the production of a maund of corn. Thus the cultivation spreads, forests are cleared for cultivation and as much land as possible is brought under plough. Thus with the growth of population, a situation arises when no more land is available for cultivation and the small portions that are available then are so unfertile that their cultivation is economically impossible. At this stage man turns his attention towards industries and towards the intensive development of agriculture and no more extension of agriculture is possible in a particular area. People then think of things other than agriculture or agriculture in an intensive form.

EXTENSION OF AGRICULTURE

The total area of the State at present is 8176 sq. miles. The total area in terms of Bighas—the local unit—is 88,90,442.

Of this total area, only 70,60,892 bighas are fit for cultivation. Of this total cultivable area, 69,80,796 bighas are already under actual cultivation i. e. nearly 78% of the total area and 96% of the cultivable area is under cultivation. The details are given below.

District	Total area in bighas	Cultivable area in bighas	Area occupied in bighas	Unoccupied cultivable area
Baroda ...	21,02,721	17,69,196	17,50,541	18,655
Mehsana ...	33,42,332	29,26,963	27,31,888	1,95,075
Navsari ...	19,72,119	11,53,938	11,41,315	12,623
Amreli ...	11,67,247	9,65,628	8,86,412	79,216
Okhamandal ...	3,06,023	2,45,167	1,70,640	74,527
Total ...	88,90,442	70,60,892	66,80,796	3,80,096

Figures according to the Administration Report for 1939-40

Changes in the occupied area :—

In spite of the industrial expansion of the State and the serious fall in the prices of agricultural products, the extension of cultivation has gone on steadily since 1881 as will be seen from the figures in the following table:—

Year	Total area	Cultivable area	Cultivated area	Percentage of 2 to 1	% age of 3 to 2
1881	93,31,641	56,09,011	45,47,889	60	81
1891	89,58,114	66,23,327	54,94,193	75	88

1901	88,19,811	67,61,362	58,15,095	75	86
1911	89,10,198	67,61,362	60,74,321	75	90
1921	88,50,303	69,68,511	64,37,679	82	92
1931	88,90,596	70,91,298	66,98,376	77	94
1941	88,90,460	70,60,892	66,87,452	77·72	96

Cultivable area :—

The figures regarding the •total area of the State ;show that the changes in it are so few that they are almost insignificant and negligible. It has remained more or less constant during the last 70 years. The cultivable area formed 60% of the total area in 1881 while in 1941 it is 75% of the total area. The people of the State have therefore now 15% more land available for cultivation.

Cultivated area :—

During the same period i. e. 1881–1941, we find that 15% more land has been taken up for cultivation as the percentage of cultivated land to the cultivable land has risen from 81 in 1881 to 96 in 1941. This shows that about 2132907 bighas of land has been added to the cultivated area and the margin of cultivable waste has been considerably narrowed in spite of lean years. Now only 4% :of cultivable land is available for cultivation.

Thus owing to nearly all the cultivable land being taken up for cultivation and nearly 75% of total area being cleared up for cultivation, the possibilities of extension of agriculture are very limited and hence every step towards the betterment of agriculture must be directed towards the intensive development of agriculture.

INTENSIVE DEVELOPMENT OF AGRICULTURE

By intensive development of agriculture we mean raising more and better yield from land. Instead of taking up more land for cultivation, people would try to raise more and better yield from the same land by employing improved implements, better seeds and other methods of intensive development. In almost all countries, population has increased so much that now there is no scope for bringing new lands under cultivation, and therefore everywhere people resort to intensive development of agriculture in order to derive greater economic benefits from the available cultivable land. In Baroda, as we have seen in the last chapter 96% of cultivable area is already under cultivation and thus there being practically no scope for extension of agriculture, intensive development assumes paramount importance.

The history of intensive development of agriculture in the State falls within well marked periods, but before we take up the study of these periods, it will be interesting to survey the conditions that obtained in the State before the systematic development began.

Prior to 1875, i. e. to the accession of His late Highness Sir Sayajirao, agriculture and agriculturists more or less did not receive attention of the State except during the reign of Maharaja Khanderao who aimed at putting a stop to the Izara or Farming system and ordered a survey of land.

The land revenue system of the early Maratha Rulers consisted in entrusting the collection of the State revenue to particular agents known as Izardars or farmers. Villages and districts were farmed out to the highest bidders who collected what they could from the village communities and paid the stipulated sum to the State, pocketing the balance. This farming system was full of evils. Maharaja Khanderao ordered the classification of land and fixed rents for each class of land and a new system of management was set up. During the reign of Maharaja Malharrao, this scientific measure was upset and a system worse than the Izara or Farming system was introduced for the collection of the revenue. According to this system, the management of the districts and revenue was granted by His Highness to certain court favourites who then became Kamavisdars. The land revenue was arbitrarily exacted by these Kamavisdars so that the inhabitants had but little inducement to pursue their avocations freely. Except for land revenue, the State took no interest in agriculture, which therefore remained in a very disorganised state.

Reforms of Maharaja Sayajirao :—

The first task of the new administration which began in 1875 on the accession of H. H. Sayajirao III to the throne was therefore to reorganise the whole land revenue administration, which it did without losing time.

"The process of summary reduction of the land assessment has been completed. As a general rule, the maximum rate of reduction was 25% and the whole reduction may be estimated to amount to twelve lakhs," writes Sir T. Madhavrao in Baroda Administration Report of 1875-76.

The effects of this were soon perceived. Year after year the outstanding balances diminished and the land revenue realisations approached nearer and nearer the demand.

After this, a scientific survey of land, soil and tenures was begun and in 1883 a regular Survey and Settlement department was organised for the whole State and land revenue settlement was effected on just and equitable basis.

After all these preliminary arrangements had been made, the work of real improvement in the technique of agriculture began. The history of these improvements falls within three well marked periods :-

1. From 1887 to 1908.
2. From 1909 to 1927.
3. From 1928 to 1941.

In the pages that follow, these periods have been designated as the first phase, the second phase and the third phase respectively, and a survey of the improvements effected during each of these periods has been attempted.

The First Phase (1887-1908)

The first period in intensive development of agriculture in Baroda has been characterised by Mr. Allan as a period of 'Set Fair' * when matters relating to agriculture were given a fairly good attention. The chief features of this period are:-agricultural education, agricultural banks and experimental farms.

During this period of 20 years that cover the first phase, the officer-in-charge of the department of agriculture had several other duties to perform. He was at one time in charge of seven departments as assistant to the Sar Suba and had to perform his duties under great difficulties.

In spite of all these handicaps, some experimental work of value was done. Efforts were made to introduce exotic varieties of cotton and sugarcane to extend the cultivation of wheat, tobacco, indigo, safflower, potatoes, mulberry and Indian fruit trees. Trials were made with artificial manures on dry and irrigated crops, attempts were made to introduce iron ploughs, reapers, cane crushers, winnowers, steam ploughs and other heavy machinery. The first phase is thus crowded with schemes of agricultural improvement. The foundation of agricultural improvement and that too an all-sided improvement was thus laid in the first phase. The second phase saw their consolidation and energetic expansion in many directions which were taken up and developed more systematically and scientifically during the third phase, during which an India-wide impetus was given to agricultural research, agricultural experiments and so on. It may be noted that much useful work from the

*Vide 50 years of agriculture in Baroda by Mr. R. G. Allan preceding phases has been taken up, evolved and brought home to the farmers during the successive phases.

The Second Phase (1909–1927)

The second phase begins with the year 1909. In 1899, the great famine came and the necessity of taking more serious steps to improve agriculture was increasingly felt. The agriculture department which was hitherto considered a temporary office in the revenue department was reorganised in 1909 and was given the status of a department with a full time director in charge of it. The department was also placed directly under the Dewan, because it was felt that interests so important to the State should receive the personal attention of the head of the administration. Periodical visits by the officers of the various departments of agriculture in British India were also arranged in order to fully carry out the policy laid down.

On the whole the progress made during this phase was fairly good. At the end of the first phase, Baroda was very much in advance of other Indian States and distinctly in advance of British India in respect of ideals and steps taken to materialise these ideals. In the second phase, the work done in the first phase was further consolidated and advanced, and distinctive additions in the form of veterinary relief and agricultural engineering were made to the existing facilities. The importance of the work was emphasized by the fact that during this phase agricultural service attained a distinct and special identity.

The Third Phase (1927-1941)

The third phase has been designated as the 'Rising Barometer' and is the most remarkable for the all-round increase in the agricultural development activities. It is in this last phase that Baroda gets definitely associated with the Indian Central Cotton Committee, the Imperial Council of Agricultural Research, and many other associations of world-wide fame. There are many marked and outstanding differences in evidence over the last two periods.

The starting of this new trend is the result of many causes of which the visit of the Royal Commission on Agriculture, the greater interest of the Senior Ministers and of the Development Commissioner and the visit of the agriculturally minded Viceroy in 1930 are very important.

Of the many evidences of rapid progress we may here mention only the major two:-the reorganisation and extension of the agriculture department and the lightening of the land-revenue burden brought about by the handsome remissions and reductions in the land revenue demand during this phase.

Noteworthy additions :—

As regards the former, we have already seen how the department of agriculture was stabilised towards the end of the second phase. Several new branches were added to the main tree during the third phase-the Horticulturist to develop the fruit industry in the State in 1936-37, the Agricultural Chemist in 1936 to analyse soil, water etc. with a view to increasing their utility, the Economic Botanist, the Marketing officers and many others. Thus the department definitely approaches parity in its potential powers of scientific investigation with similar organisations in the other principal Provinces and States of the country. The great development that took place in the agriculture department and consequently in agricultural improvement is reflected in the increasing expenditure of the department.

The table showing the expenditure of the Agriculture department during the decade 1931-41.

Year	Expenditure in Rs.	Year	Expenditure in Rs.
1930-31	1·35	1935-36	2·3
1931-32	1·42	1936-37	3·4
1932-33	1·66	1937-38	4·1
1933-34	1·85	1938-39	5·2
1934-35	1·8	1939-40	6·81

Reduction in land-revenue :—

We now come to the other important feature viz., reduction and remissions in the land revenue. In the beginning, it may be mentioned that due to the scarcity of rain in some parts of the State and the continued depression during the past decade, the remission and suspension of land revenue granted during the years

1926 and 1938-39 amounted to Rs. 75½ lakhs and Rs. 119 lakhs respectively. These facilities are the greatest of the kind and far exceed those amounting to Rs. 14.7 lakhs given during the great famine of 1900. This fact alone speaks volumes for the liberal land revenue policy of fhe Government. But in this matter the year 1938-39 stands as a land-mark. A glimpse into the readjustment of land revenue assessment which was carried out in the year 1938-39 will throw further light on the revenue policy of the Baroda Government which is as under :-

"The current settlements were grouped under three heads: (i) those introduced upto 1908-09, (ii) those introduced between 1909-10 and 1919-20 and (iii) those from 1920-21 to 1930-31 In the first group of mahals a reduction of 2 annas in the rupee was given; in the second group a reduction of 3 annas in the rupee and in the third of 4 annas in the rupee. In February 1939, these reduced rates were permanently substituted for the existing settlement rates, subject, of course, to the usual policy of re-settlements. The total reduction in land revenue thus sanctioned amounted to Rs. 21.67 lakhs or 20.3 per cent of the land revenue. The application of the reductions to alienated and ankadia villages involved a remission of an additional amount of Rs. 5 lakhs a year. There has also been corresponding reduction in the amount of local cess. Needless to say, these liberal measures of relief have been acclaimed with unmixed joy and gratitude throughout the State".

Widened sphere :-

Thus we see that during this phase a comprehensive programme to ameliorate the lot of the agriculturist was undertaken by the Government. At this stage it will be interesting to cast a glance at the various improvements in agriculture effected during this phase.

As seen in the first paragraph, during this phase, the State comes into closer touch with the Indian Central Cotton Committee and the Imperial Council of Agricultural Research, as a result of which many schemes of agricultural improvement in Baroda State are undertaken jointly by Baroda and these bodies, over and above the schemes financed solely by Baroda State. The following are a few of the important schemes operated under the joint auspices of the Indian Central Cotton Committee or Imperial Council of Agricultural Research on one hand and the State on the other :—

1 Cotton Root Rot Research scheme,
2 Goghari cotton survey in Navsari district,
3 Cotton Plant Puller Propaganda scheme from 1935,
4 Cotton Seed distribution scheme,
5 Investigation of suitable types of sugar cane for Gujarat from 1935,
6 Dholleras cotton improvement scheme from 1936,
7 B. D. 8 Cotton extension scheme from 1939,
8 Vyara Sugar cane research scheme.

The work done under these various schemes uptil now is very encouraging. It has considerably expanded the sphere of research on vital problems of crop-production, has led to the wider use of improved implements and to the growing of better types of crops.

CHAPTER 6

AGRICULTURAL EDUCATION

Agricultural education represents the first movement towards better farming initiated in the State in 1887. It saw the light of the day in a class of 25 students. The biased schools, certainly the first of their kind in India, were also opened at Songadh, Arhati and Maha in Navsari district and at Kadi in 1895 for the benefit of the boys of the backward class.

This movement of agricultural education failed during the first phase as general education was less advanced and training imparted by this movement was more of the school room than of the fields and was academic rather than practical. The movement was also in part a little before its time. Hence the interest in it was not maintained in spite of many concessions given by the State. The climax was reached in 1910 when the agricultural class at Baroda was closed down.

The second phase witnessed almost complete loss of interest in agricultural education. Still an attempt was made at Baroda again in 1916–17 which attracted some students on scholarship. But most of them left during the year and for the time-being agricultural education passed into oblivion till 1926.

During the last phase, public appreciation of the efforts towards agricultural education grew high and the demand for admission exceeded accommodation, as is seen from a number of applications received for admission when it was not possible to admit all of them. An agricultural Institute was established at Baroda in 1936. This institution offers facilities of specialised training and higher agricultural education. In 1938 an Agricultural Vocational Institute was created. Many schools having a bias for agricultural training were also established in rural areas during this period by the education department of the State.

Facilities at present :—

Agricultural education is now imparted through the following institutions:—

1. Baroda Farm, 2. Jagudan Farm, 3. Amreli Farm, 4. Rural Reconstruction Centres, 5. Visits of the villagers to the places of agricultural interest, 6. Better Farming Societies, 7. Vocational schools, 8. Publications, 9. Thakarda Boarding School at Patan. 10. Lectures by the members of the staff.

Eight different classes for a period ranging between 2 and 12 months are conducted on Baroda Farm while short 3 months' courses are conducted at Jagudan and Amreli Farms. The classes on Baroda Farm are as under :—

1. Annual agricultural class,
2. Course in important features of modern agriculture (3 months),

3. The Mali Class (10 months)
4. Short courses in fruit preservation,
5. Virginia tobacco curing course (2 months),
6. The oil engine and tractor class (12 weeks),
7. Dairying and live-stock practical class, Makarpura,
8. Apprentice or Better-farming class.

All students receive stipends while they are for training on the farms. The candidates who go back from year to year to their villages, after receiving training, help to improve the standard of cultivation in their neighbourhood. Visits to features of agricultural interest are also made available to leading farmers in Better Farming societies. Several such parties were taken to tube-well areas in U. P., to the Imperial Agricultural Institute, New Delhi, to Baroda and other farms, to Rural Reconstruction Centres and such other places. Practical training in agriculture and gardening is also imparted at Thakarada Boarding School, Patan.

Exhibitions and shows of various kinds, which form an integral part of agricultural education, also attract attention during this phase. Of course, the first agricultural and industrial exhibition was held as far back as 1923, but more notable are the products of the last phase. The travelling train exhibition in Mehsana and Baroda districts of 1928 and 1930, the Jubilee exhibition in 1936, the exhibitions of the Rural Reconstruction Centres at Kosamba and Karjan and the Plantain exhibition at Asoja are some of the important examples.

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CHAPTER 7

AGRICULTURAL PROPAGANDA

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It is very difficult to draw hard and fast lines between agricultural education and agricultural propaganda for the ultimate aim of both is that the agriculturists should be made to know what improvements are possible in agriculture, and how to effect these improvements. This is certainly a very important task for without it all the efforts to improve the lot of the agriculturists will be of no avail.

The basic problem of agricultural improvement is, therefore, how to bring the farmer in touch with the work done on the demonstration farms, and how to make him familiar with the improved seeds, scientific collection of manure and improved methods of cultivation, generally. This problem is being tackled through agricultural propaganda and agricultural education.

Agricultural propaganda took shape first in 1893 when a Resident Fieldman was appointed at Okhamandal. Thereafter towards 1905-06, agricultural Inspectors were appointed at Amreli, Mehsana and Okhamandal. These Inspectors were responsible for introduction of certain new crops.

During the early part of the second phase, enthusiasm for agriculture was kindled among the people. Honorary correspondents were appointed and encouragement was given to the supply of improved implements to the cultivators at less than cost price. Agricultural associations were formed all over the Raj. An agricultural Museum, which arranged cattle shows in each taluka, was started in Mehsana. Agricultural shows demonstrating the benefit of improved implements were held. A travelling agricultural exhibition was also put into effect. Lectures were given by the revenue officers and leaflets and pamphlets on various subjects such as the advantages of raising fodder, the improvement of cattle breeding and the inconvenience of small holdings, were published and freely distributed.

During the last phase several new agencies have been added and all possible efforts are made to bring home to the cultivators the results of various experiments and researches in agricultural improvement. The new agencies are:-(1) Rural Reconstruction Centres. (2) Intensive Units. (3) Itinerant Cart Circuits. (4) Better Farming Societies.

Rural Reconstruction Centres:—

It is now an acknowledged fact that unless the rural problem is simultaneously attacked on all fronts affecting rural welfare, our efforts to solve it would not go very

far. With this object in view, a Rural Reconstruction Centre was opened at Kosamba in 1932. The main functions of the centre are to set up village councils, to put up all useful sections at the centre, to serve as a training place for the village population in subsidiary occupation and to induce the rural population to take practical and active interest in all matters of their economic welfare, leading to better sanitation, health and citizenship and finally to better economic condition. Another centre is opened at Karjan.

It may, however, be mentioned here that a Rural Reconstruction Centre is not intended to be a permanent institution. Its aim is to develop a desire for higher standard of living- 'the, will to live better'-and bring into existence in the area enthusiastic workers with qualities of leadership, who can eventually take over, maintain and develop the work done by the centre. To achieve this object, the Government has adopted the policy of establishing in each village a co-operative society which would serve all its needs and of doing the work of improvement more and more through these societies. When societies have been started in all the villages, a union is to be formed to which will eventually be entrusted the task of continuing the work of the centre.

Intensive units:—

A scheme of concentration of propaganda in a limited area to achieve speedy progress in agricultural improvement was started in the year 1936. Five 'units' comprising 100 villages were planned out in such a way as to carry out intensive propaganda in the tracts suitable for particular items of possible agricultural improvement.

Every unit is divided into sub-units of 7 or 8 villages. Each unit is in charge of a 'Unit Overseer' and each sub-unit of a Kamgar assisted by a fieldman, all trained on the Government Farms. The Kamgar and party go round the sub-unit villages frequently and carry out on agriculturists' farms selected experiments as an object lesson to villagers, besides instructing them in efficient methods of collecting manure and distributing seeds. There are 18 units at present serving 417 villages.

Itinerant cart circuits:—

In the areas outside the intensive zones, the work of agricultural propaganda is carried out through itinerant cart circuits. Tours of specially designed cart with demons tration outfit were arranged to go round these areas. The main object of cart circuits is to arouse mass interest in agricultural improvements. These itinerancies are in charge of graduate assistants who tour according to settled programme with itinerant carts, showing to villagers the use of improved seeds and implements, teaching them methods of collecting and preserving manure and distributing among them seeeds, plants and implements at concession prices. During the year 1940-41, 29 circuits covered 252 villages of the State.

Better Farming Societies :—

At each village in the areas under intensive attack, there is a Better Farmers' Club with membership ranging from abont 12 to 40. There are at present about 500 such Societies in the state.

CHAPTER 8

AGRICULTURAL RESEARCH.

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Agricultural research now falls within five main groups :—

1. Experimental Farms 2. Seed Supply
3. Agricultural Chemistry 4. Plant Breeding
5. Plant Pathology.

Experimental Farms :—

One of the earliest measures organised for the development of agriculture is that of experimental farms. They were organised as early as 1893 and were placed in charge of the persons who were specially trained by the State at the Royal College of Agriculture, England. During the first phase, two farms were established-one at Baroda and the other at Songadh. The work carried out on these farms was more of an observational nature than of an experimental one.

The crop experiments at Baroda consisted chiefly of desultory trials of cotton, tobacco, groundnut varieties and even of jute. The farm at Songadh was engaged in the trial of jowar, bajra, cotton, certain vegetable crops etc.

Along with the experimental farms, supply of pure and good seed was also undertaken by the Government and seed and fertiliser stores were created at Padra, Kheralu, Songadh, Kodinar and at Kalol. This was definitely in advance of anything then contemplated in the rest of India.

During the second phase, experimental work was continued. Another but all too small a farm was added at Jagudan in Mehsana and a little later the Baroda Farm was extended by 40 bighas. Two more attempts were also made-one at Dabhoi in 1915 and the other at Gomti in 1916-but they were short lived. A further attempt was again made at Dabhoi in 1924-25 but it met the same disappointing fate.

All these farms were small and not well equipped. They were so equipped as to yield only empirical results.

During the last period the experimental farms improved in efficiency, distribution and strength. With the increase in their utility they increased in number and size. At the end of the second phase, the department was in possession of two small farms at Baroda, and Jagudan with a total area of 177 bighas. During the third phase the farm at Jagudan was extended from 30 bighas to 67 bighas in 1936-37. Baroda Farm was .extended from 147 bighas to 185 bighas in 1936-37. In Amreli, a small farm was set up in 1927-28. In 1933-34 a small sugar-cane and paddy farm covering 21 bighas was opened at Vyara.

In 1936-37 the cotton farm covering 109 bighas was established at Vesma and in 1937-38 a small fruit farm covering 30 bighas came into being in Gandevi. The total farmed land of the department increased from 244 in 1930 to 515 bighas in 1940.

There are at present seven experimental farms in the State, the policy being to have a separate farm experimenting with conditions and crops of each of the distinct agricultural tracts of the State, and helping to provide the needs for pedigreed seeds, modern implements and manure.

Farms :—

The central farm of the State is the Baroda Farm. It carries out cultural, varietal and manurial experiments with the crops of the district. The Horticulturist and the Economic Botanist conduct their researches mainly on this farm attached to which is the Agricultural Institute which imparts agricultural education. The principal object of Dabhoi farm is to serve as a centre for the production of pedigreed seeds of B. D. 8 type of cotton, best suited to this tract and to undertake experiments for the study of the special problems connected with the irrigation of black cotton soils. The primary fuction of the Farm at Vesma is to supply seed of 1027 A. L. F. cotton. The Vyara Farm is to experiment with the new types of sugarcane and supply sets of improved cane to cultivators. For the experimental work several types of cane have been tried in field series and it has been found that Ç. O. 419 yields the best results.

The Jagudan Farm including the Agricultural institute represents the sandy alluvial soil of 'the Mehsana district. It conducts systematic trials and experiments with the more important crops of the area such as cotton, ground-nut, juwar, bajri and wheat. The farm is associated with Dholleras cotton improvement scheme sponsored by the Indian Central Cotton Committee and conducts experiments with Wagad types of cotton.

The Farm at Amreli represents the medium black soil of the tract and conducts experiments on important crops and multiplies seed of promising types. The Dholleras cotton scheme functions at this farm also.

At Kodinar a small farm of 20 bighas was started last year as a joint enterprise with the Kodinar Banking Union. The farm provides the taluka and the union with a nucleus for the effective testing of new varieties of crops and serves as a principal focus for the expansion of fruit in the area.

Dry Farming stations :—

Besides the above farms, two dry farming stations have been established one at Harij for North Mehsana District and the other at Kalyanpura in Okhamandal.

However the area expansion and the increase in the number of farms are not themselves any criterion of advance. The real advance lay in the change of policy. Upto the opening of the present period, the farms were managed on the basis of model farms. In 1936-37, this system was dropped and they were made to serve the more practical needs of the agricultural community of the State.

Seed Supply :—

In the last few years much has been done to increase the number of major farms and to extend the areas of such as did exist, so that these can cope effectively with their twin duties of experiment under local conditions and the creation of sufficiently large nuclei of such types of seeds as are definite improvements, so as to meet the requirements of first class registered seed farms whence the selected variety may pass out to growers' seed unions or to the seed farmers in the village better farming societies for further multiplication and subsequent distribution for commercial sowings.

The State is thus in a position to-day to satisfy itself that the varieties offered are suitable and are improvements and that it can create the necessary primary seed on which its seed organisation can be developed. Though the process of creating new types either by selection or by plant breeding never ceases and as time passes better types either on the basis of their yielding capacity, better quality or resistance to disease will undoubtedly be evolved and established, the department has at the present day a number of improved types which according to local conditions it can recommend with certainty as improvements in some way or the other, while to meet the growing demand for pure seed, supplies are being steadily built up.

Under cottons, it can recommend and provide according to district and soil 1027 A. L. F., B. D. 8, B. 9, Wagad 8, C. 520: under ground-nut A. H. 32 and A. H. 25: under sugar-cane P. O. J. 2878, C. O. 419 and C. O. 421 : under juar, Budh Perio Juar in Navasari and Ramkhel Juar in Mehsana : under paddies. Kolam 226 and 184, Nagina T. 1 and T. 21 : under bajra in Mehsana District 'Jagudan farm Special' : under wheats Pusa 52, Pusa 4, Cawnpore 13 and Deccan 808.

Agricultural Chemistry :–

Agricultural Chemistry is the latest addition in the field of agricultural research. The starting of this new branch in agricultural research has supplied a long felt want. The capricious character of rain in India makes irrigation an imperative necessity and if irrigation is to be developed, well and tank waters in relation to soil need to be specially studied. The analysis of different soils is also very useful in indicating the lines along which enrichment of soils could be made and selection of area for better production of each kind of crop may be undertaken.

With a view to undertake research in these various directions, over and above the various schemes mentioned in the previous chapter, the Government sanctioned the appointment of an Agricultural Chemist in 1936. In the beginning, he was deputed to the Central Provinces for 8 months' intensive experience in Agricultural Chemistry, primarily that of soil and water.

The work done by the Agricultural Chemist during

4 years (1937-41) can be surveyed under the following main heads :—

1. Extensive survey and intensive study of well and tank waters.
2. The growth of different cottons in different tracts.
3. Application of rapid chemical methods of analysis to soils and irrigation waters.
4. Sugarcane Research at Vyara.
5. Investigations into the salt lands near Nimetta.

In all these heads, considerable research work has been done and the possibility of effectively using well and tank waters for irrigation has been established.

Plant Breeding :—

In view of the extremely lower yield on Indian soils and the poor quality of that yield, plant breeding becomes a very important item in the development of agriculture. In this branch of agricultural research, the greatest attack has been upon the improvement of cotton. Cotton, throughout the State, is far from being a uniform crop. Each district has its own particular soil and climatic conditions and in each the varieties best suited differ. In Baroda district, the position is even more complicated as in addition to the difficulties of the soil, there are two serious soil-borne diseases. Types of cotton immune to these diseases are investigated and recommended. In Navsari District, the main problem is the production of better and more productive types and improvement in the ginnig percentage of 1027 A. L. F. cotton.

The plant breeding work at Baroda is concerned with the production of an improved Root rot resistant type of cotton for use on the gorat and besar soils. A large number of varieties from all over India and even from outside India have been tried. Although a completely inmune cotton has not been evolved, the department has in a cotton selection, called Karkhadi, a cotton from which types of cotton having a marked resistance to this disease have been evolved.

Field trials with types of juar, bajra and castor show that in many of the cases, the local variety is better than that from outside. Real improvement is therefore more likely by making a selection and the application of modern technique to the locol crops. The Baroda farm Bajri as well as Jagudan farm Bajri is a production of pure selection from the local types. Attention is also being paid to til and fodder types of juar. In early til, preliminary trials show that certain selections show considerable yield differences.

Plant pathology :—

The work in this section has been mainly devoted to cotton problems and been largely financed by the Indian Central Cotton Committee. The incidence of Root-rot in cotton has been traced to the influence of the organism Macrophomina phescota and Nematodes acting either singly or in combination. When bajra is sown in lines between cotton, a high protection from Rootrot is afforded. Liberal application of urine earth and composts have some retarding influence. Early sowings tend to stimulate the attack. It may however be said that field control measures have not as yet met with much success, and the most likely form of easily applied protection is the creation of a disease resisting type as likely to be met with in the Karkhadi selection.

Work is also under progress in seeking remedial measures against soft rot of ginger which is rapidly becoming a menace in Gandevi. Nematodes are the primary cause of the heavy loss not infrequently in evidence. These worms can develop very rapidly in the climatic conditions of this tract, and bad rotation aggravates the deadly nematode or fungoid attack. A number of treatments have been experimented upon for the control of the attack, and of these Bordeaux mixture appears so far to yield the best results.

CHAPTER 9

AGRICULTURAL ENGINEERING.

The essential functions of this section are the improvement of wells, the study of underground water supplies, the introduction and demonstration of power driven machinery suitable to the farm needs, the creation and trial of agricultural implements, the oil engine and tractor-training and the demonstration of the value of electric power to agriculture.

It is during the second phase of agricultural development that agricultural enginneering makes its appearance.

The activities of this section in Baroda started with boring operations for the improvement of agricultural well water. The first instance took place in 1909-10 when in Padra taluka a hand boring set borrowed from Bombay is used. Later a special section engaged solely in this class of work followed. In 1917-18, the first Agricultural Engineer was appointed. Hitherto boring was confined to soft soil strata conditions obtaining in Mehsana and greater part of Baroda districts. In 1924-25, the possibilities of improving the wells were successfully investigated and in 1927-28, demonstrations regarding the effectiveness of portable pumping sets on the co-operative basis were given.

Tractor ploughing :—

It was also during this phase that tractor ploughing was introduced in Baroda. The agricultural tractor made its first appearance in India by about 1919. Baroda State showed a very considerable interest in this form of power and a number of persons invested in the earlier models, of tractors either for use on their own land or for engaging in contract ploughing. The tractors of that day were all of rather low power and dependent on kerosene. The work done was very largely directed towards the breaking up of old grass lands helping the general extension of agriculture, which accompanied the boom, following on the close of the Great War 1914-18. Prices of crops were high, the demand for cultivable land was considerable and between 1922-1930, there was a considerable boom in tractor ploughing, and profits arising from contract work were substantial. The prices of tractor ploughing which ruled during that period ranged between Rs. 26/-and Rs. 31/- per acre. The tractors as mentioned above were not really constructed for the very heavy strain demanded in ploughing the black soils of Navsari and Baroda and naturally the utility of such machines came to be questioned.

Agricultural engineering gets a considerable stimulus during the last or present phase.

Well-boring :—

During this phase the example set by the department in the improvement of open wells by boring has been followed by private enterprize, reducing the direct demand on the department. The section possesses at present 19 hand sets and 4 power sets. The hand sets are mainly engaged in Baroda and Mehsana districts, while the power sets are utilized in Amreli and Navsari districts.

Any cultivator who wants a boring made has to pay a deposit of Rs. 25/— in the Mahal treasury and enclose receipt of the same with the application to Agricultural Engineer. The boring set is sent to the nearest station free of charge.

The department has recently organised a campaign of tube-wells. In certain tracts deep level cavity and strainer tube-wells afford better and cheaper facilities where oil engine or electric power is available. There has been a distinct increase in the boring done, specially in Mehsana in the creation of tube wells runing to 200 ' or 250' in depth.

It is however in the realm of well improvement in the rock strata, in particular in Amreli, in which departmental effort has been most marked. In this area, it is a matter of drilling and blasting so as to deepen the well or to tap new streams. The introduction of two tractor operated compression drills to facilitate this work and the free provision of taccavi for such improvement have tended under the short rainfall character of the monsoon of the recent years to an enormous increase in the number of wells thus improved and the additional water made available. The number of wells thus dynamited rose from 20 in 1935 to 589 in 1940. In this work, the State pays half the cost of the dynamite used.

The introduction and erections of oil engines and pumps and electric motors and pumps, though it may not increase the water, is a useful direction of work as it permits a larger withdrawal from capacity wells. Of recent years there has been round Baroda city itself a marked increase in the use of electric power in pumping and nearly 100 wells have been so fitted.

Reverting to tractor ploughing, we find that rom 1930 onward there came a period of deterioration in the use of tractors owing to the general fall in prices, which made it impossible for the cultivator to pay the very high rates, which were then in demand on the part of private contractors. The interest in power cultivation therefore to all intents and purposes ceased and by 1935, tractors were not in common use. It was however decided in 1936 that a further attempt should be made to reintroduce power cultivation, as it was felt that, provided the prices at which work was done were reasonable, there existed ample scope for work of this description, in particular in the soils of the Navsari district, many of which were showing signs of being overrun by Kans grass. On this class of soil, though annual ploughing to any depth cannot be regarded as a profitable practice, there is considerable evidence to show that periodic deep cultivation is of very considerable value. The adverse effects of kans agriculture in general and the need for periodic deep cultivation are fully recognised by the famer of the Navsari district. It was, therefore, decided that the agriculture department should build up a fleet of tractors, which could be utilised singly in some instances but in general as a fleet for this purpose during 4 months of the year. approximately February to May in which it is possible to deal with land in this fashion.

The prices that are at present asked for by the department for the carrying out of work of this character are very much less than those which prevailed 15 years ago. The work is being done at a bare cost of carrying it out. There has been a very marked demand for the use of this service, as can be realised from the fact that the area turned by the tractors was only 600 bighas in 1937 while the same was about 4000 bighas in 1940.

It may be pointed out that even the figures for the year 1939-40 represents only about ⅓rd of the actual demand received by the department for work of this kind. In view of the fact that tractors in order to be economically worked must operate as a gang under expert control, it is not possible for the department to send the fleet of tractors here and there for small scale operations as demands may arise. Areas which require this work must be of fair size. It is usual to decide on the basis of applications coming in as to the taluka or taluks in which the tractor gang will operate during the ploughing season. Once this is decided steps are taken to advertise the fact and to secure as many applicants as possible for the tractor service in the area in which operation is intended. The reports received as the outcome of such ploughing during the recent years indicate that very substantial increases have been obtained in the yields, and that the cost of doing this work, is very easily repaid by the increased returns secured from the areas.

Agicultural Implements :—

In the year 1937 the first systematic effort to design and construct agricultural implements suited to local needs and to create a local industry was made. This attempt resulted in the creation of the Gandhi-Allan cultivator and hoe which is capable, with adjustment, of several tyes of work and is particularly adopted to Gujarat soils and planting conditions. The hoe is made in Baroda and in the last two or three years the sales have run to many hundreds.

Another useful production of this section is an improved threshing implement, which does away with the need of the large number of bullocks employed for this purpose, making them available for better tillage. The cost of threshing is about 30% of that which the old method would demand.

It also has to its credit the adaptation and creation of several soil moving appliances of use in grading, levelling and bunding.

The levish demonstratoin of simple modern implements forms an important feature of work in the areas of intensive activity and in the itinerant cart circuits. There has been a remarkable stimulation of popular interest in ploughs, cultivators, hoes, and fodder cutters, as is evidenced by the figures which show that while the number of implements supplied to farmers was only 27 in 1935, it rose to about 1000 in 1941.

Further inducement is now coming into play in the introduction of a system of hire purchase and of rebates made available to the poorer types of cultivator by the provision of Rs.6000/- per annum for a period of 3 years from the Diamond Jubilee Trust Funds.

Workshop :—

A workshop is also maintained at Baroda for repairs of boring materials, ploughs and for the construction of the miscellaneous requirements of the departmental institutions. The mistry engaged for the purpose also besides the workshop attendance imparts practical training in carpentry and smithy to the students of the Agricultural Institute, Baroda.

CHAPTER 10

HORTICULTURE

The territory of Baroda State being scattered all over Gujarat and Kathiawar, is representative of a very wide region, well suited to develop a profitable fruit industry. At all stages of history, fruit figures as an item of interest on Government Farms in Baroda; though the real beginning of development of fruit cultivation should be attributed to the third phase only.

The creation of Jagudan farm during the second phase appears to have been governed by the desire to see more fruit in Mehsana district and there is no doubt that long before the opening of the last phase it has its effect in extending the cultivation of limes, papaya and bor.

In the earlier years of this third or present phase, the Government constituted a committee to investigate the possibilities of wider expansion of fruit. The committee suggested various concessions which were readily given effect to by the Government. It resulted in the opening of the Horticultural section from 1st April 1936.

The activities of the section are at present centred round the following main phases of development:—

1. Orchard survey. 2. Economics of fruit growing. 3. District propaganda. 4. Registration of Nurserymen. 5. Shows and demonstrations. 6. Organisation of fruit growers. 7. Fruit development schemes. 8. Training and education. 9. Publication of literature. 10. Fruit preservation. 11. Commercialization of lime juice. 12. Marketing of fruits. 13. Fruit nurseries or fruit research stations. 14. Remodelling of Government plantations, introduction of new varieties etc.

In 1935-36, a survey of the Gandevi Taluka in its relation to fruit growing and fruit extension work was carried out. In 1936-37 similar surveys of Dhari taluka and later on of Kodinar taluka were undertaken. In 1937-38 a nursery plot was laid out at Dhari where Fruit Growers' association has been established. The association has now 29 members. In 1938-39 small fruit farms were opened at Gandevi and Kodinar and demonstrations in better methods of fruit cultivation were given. Several new fruits like Italian lemon, grape fruit, tangelo orange etc., have been introduced and fruit diseases were investigated and counteracted. The experimental work in this connection is carried on at Baroda, Amreli and Jagudan Farms.

Fruit Preservation Laboratory:—

With the increased production of fruit, preservation of fruit becomes necessary. With a view to investigate into the methods of fruit preservation and spread them among the public, a fruit preservation laboratory was started at an initial cost of Rs. 24000/-. In this laboratory, full and exhaustive work has been carried out on the economic utilization of Kagdi lime fruit which is extensively grown in the State. Lime juice and cordial, dried lime peel and lime peel powder, lime pickle and lime seeds for nursery purposes are the various products obtained from this fruit, turning its money value from about Rs. 45/- only per ton of fresh fruits to about Rs. 650/- for the various products obtained from the same quantity. Several other fruits such as papaya, guava, mango, orange, grape fruit and pineapple are found for the first time to yield a jelly of high quality.

Training Class :—

A quarterly training class in elementary fruit preservation is being conducted in this laboratory, and so far, about 75 students have been trained. For this purpose, there exists a reciprocal arrangement with the Government of Bombay, in that the students of the adjoining British areas are admitted to this class without charging any fees. Students from the surrounding States may also take advantage of it.

There has been considerable increase—of about 4000 bighas—in the area under fruit as a result of the efforts of the section. Further work on the economic utilization of country mangoes in squashes, jams, chutneys, etc., of papaya, guava and chiku in making jams, jellies etc., is about to be taken up in this laboratory. A private firm has recently started manufacturing lime and other products under the name of "The Indian Pure Fruit Products, Baroda". Samples of their products are found to be of high quality.

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CHAPTER 11

AGRICULTURAL MARKETING

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Evils of middlemen are too well known to be mentioned here. If the increased profit from better agriculture is to be secured for the cultivator himself, the problem of the marketing of his crops should be satisfactorily tackled first. This branch of the agricultural development which takes up a closer examination of the economic side of crop production, is mainly the product of the present phase though even prior to 1925 the need to devote attention to the crop disposal was recognised. But in this matter, as in many other matters related to agriculture, enthusiasm is created during this phase. By 1930, a few co-operative sale societies were organised. From 1934-35, an exhaustive survey of all the major crops and animal products of the State was undertaken to provide a foundation on which alone a comprehensive and efficient system of marketing can be based. The following surveys have already been completed.

(1) Surveys pertaining to marketing of animal husbandry and fruits :—

1. Cattle. 2. Milk, 3. Eggs, 4. Bananas, 5. Pine-apples, 6. Lemons, 7. Grapes, 8. Hides and skins 9. Markets aud fairs, 10. Mango.

(2) Surveys pertaining to marketing of crops:-1. Wheat, 2. Rice, 3. Tobacco, 4. Groundnut, 5. Linseed, 6. Gram, juar and bajri, 7. Mustard seed, 8. Rape seed. 9. Potato, 10. Ghee and butter, 11. Wood. 12. Sugar.

Pooling centres :—

There are at present 7 pooling centres for the co-operative marketing of the cultivators' crops. The marketing through these centres is financed by a loan of Rs. 5 lakhs secured from the Bank of Baroda. The loan enables the advance payment upto 70 per-cent. The Government also sanctioned Rs. 15,000 free of interest for the purpose.

In 1937 a Marketing officer was put at Surat to keep groups of farmers and sale societies in touch with the market. In 1938-39, five societies and 4 groups pooled their crops at the pooling centres. The number increased to 16 and 19 respectively in 1939-40 while it was 19 and 35 in 1941.

This helped the cultivators in realising better prices for cotton grown in the Navsari district, and resulted in securing Rs. 5 to 12 as premium over day to day prices of such cotton. The figures in the follow. table show the useful work that is being done by the Surat Marketing Office.

Year	Bales sold by the office	Average preminm realised over local cotton per Khandi
1938	2146	Rs. 5- 4-6
193.	2760	„ 7-12-9
1940	6750	„ 10- 6-9
1941	5575	„ 13-11-2

Besides obtaining better prices for 1027 A. L. F. cotton, the Surat office has helped in standardising this cotton under the AG Mark which is accepted in the market as a guarantee for purity.

Besides the above office, two marketing officers were appointed in 1938.

Regulated markets :—

In 1939, an experiment in regulated markets was undertaken at Bodeli and on 22nd December 1939, the market was declared open. Rupees twenty-three thousand were required for the purpose. Arrangements to open a similar market at Amreli are in progress.

The chief aim of the controlled market is to secure as much benefit to the agriculturist as possible by securing higher prices for the cultivator's goods, by putting an end to all illegal exactions and by eliminating the middlemen and corruption. To help achieving this aim, the Agricultural Produce Act was applied in the year 1939. Rules under the Act provide the construction of the Marketing Committee which gives ½ representation to the growers of agricultural produce along with one elected member each from the co-operative societies, the prant panchayat and the municipality and two nominees of the Sar Suba. The rest of the members are to be elected by traders dealing in agricultural produce. The Marketing Officer advises the committee, whenever necessary.

This market committee is responsible for the effective fulfilment of the marketing rules. In order to have a complete check on dalals, brokers and other malpractices and on the operation of the market, there are three sub-committees: one supervises the weights and measures and sales by the dalals and merchants; the other sees that there are no disputes between the sellers and buyers and if any, the sub-committee acts as arbitrator and its decision is final; the third sub-committee supervises the market area, roads, buildings etc.,

Among other activities of the section, may be mentioned ghee grading and grading of eggs.

Grading of ghee:—

Baroda State has a very important trade in export of ghee which was seen to be diminishing owing to the prevalent practices of adulteration. It was necessary to start centres for ghee-grading. Two centres were opened: one at Visnagar and the other at Dhinoj, both in Mehsana District, in January 1939. Two more centres were later started; one at Baroda and one at Dhari. The total quantity of ghee graded by these centres was 69,372 lbs in 1940-41. These centres are placed in charge of a Ghee Grader who supervises the heating and filtering of ghee and gets the 4 gallon tins packed for the trader in his presence, affixing AG mark seal on each tin before sending it out. He charges a cess of As. 3 per tin.

Grading of eggs :—

At the time of marketing survey of eggs, it was observed that egg producers never realized the price for their eggs which they ought to get. The egg merchants generally deceived these poor illiterate agriculturists in the purchase of their commodity, offering them a price far below the market standard. To improve this system of egg-marketing and to introduce system of grading them, an egg-grading centre was started at the village Anaval of Navsari District. During the first six months of 1941, 32,671 eggs were graded and AG marked.

The chief aim of this centre is to organise an egg collectors' cooperative society, thus eliminating the middlemen and giving a greater profit to the villagers.

Thus the work of the marketing section in general aims at the more extensive use of the agreed commodity standards, the elimination of waste and better organisation of producers for marketing purposes.

CHAPTER 12

IRRIGATION

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In a country where agriculture forms the source of livelihood of the majority of people and where capricious rainfall creates adverse seasonal conditions year after year, irrigation becomes an imperative necessity. Other efforts to improve agriculture do not yield expected results in absence of irrigation facilities. Baroda State is no exception to this description.

Prior to 1885, irrigation was practised in the several districts of the State by means of crudely managed rice ponds or small tanks. A regular, well defined and controlled system of irrigation commenced during the early nineties. In the year 1885, a temporary administrative division for irrigation was created for the development of irrigation and drainage works. It undertook drainage of khar-salty-lands of the Mehsana division.

A great impetus to the installation of well-defined and controlled irrigation systems was however given by the unprecedented famine of the year 1899-1900 when several major and minor tank irrigation works were undertaken by the Government to provide relief to famine stricken people and also to find sources of water for irrigation. During the period following famine, the enthusiasm for a bold irrigation policy was so great that irrigation works costing about Rs. 50 to 60 lakhs were undertaken and put into operation within a span of a few years

The principal irrigation works of the period which are still functioning are the Orsang Feeder and Wadhwana tank system in Baroda district, Dosuwada tank in Navsari district, Bhimgaja tank in Amreli district and Kadarpur tank and a weir across the Sarasvati river in Mehsana district.

Most of these works were originally constructed as productive works but irrigation under them has not sufficiently developed so far, so as to justify their being classed as productive works. This is mostly due to lack of willing use of the irrigation facilities by the ryots. But the protective value of these works in case of failure of rains is not inconsiderable as they effect a substantial saving of crops on such occasions.

Subsequent to the construction of most of these works under the impetus given by the famine of 1900, irrigation policy in Baroda lost its glamour owing to the lack of willing use by the ryots of irrigation facilities and for seiveral years not only no substantial new works were undertaken but even the existing ones were allowed to fall into a state of deterioration.

After a lapse of about 20 years, from 1927 onwards a policy of preserving and rectifying past irrigation works was pursued.

The present irrigation facilities in the State may be grouped as under:—

1. Tanks.
2. Wells.
3. Rivers.
4. Irrigation by pumping.
5. Irrigation by tubewells.

The number of wells and tanks in use for irrigation purposes at the end of the year 1939-40 was 88,213 and 10,195 respectively. Besides the tanks and wells, there are 564 other sources of irrigation which include river irrigation, irrigation by pumping and irrigation by tubewells. Of the river irrigation projects, two deserve special mention here, Sabarmati river project and Zankhari irrigation project.

Sabarmati Project :—

Sabarmati irrigation project is mainly intended to protect the Mehsana district, parts of which proverbially suffer from lack of rainfall. The river Sabarmati is to be bunded with a masonary dam, forming a big reservoir of 18,000 m. cft capacity. This reservoir is expected to irrigate an area of about one lakh bighas of land. The total cost is estimated to be Rs. 1·65 crores.

Zankhari project :—

Under this scheme, a storage reservoir of 55,000 m. cft. capacity is to be constructed by bunding up the Zankhari river. This storage is expected to provide for irrigation of about 35,000 acres of land. The canal falls are also to be utilised for generating electricity.

Pump Irrigation :—

Irrigation by pumping is especially undertaken in Navsari district for watering rich crops like sugacane. There are two important schemes—Manekpura Lift Irrigation and Umra Lift Irrigation scheme. The former has a capacity to supply 2,40,000 gallons of water.

Tube-wells :—

Irrigation by tube-wells is also attempted with a a view to utilise and develop sub-soil water supplies. The chief centre is Vijapur. In this scheme, a number of wells are to be worked by electric grid. The estimated cost of the scheme is about Rs. 10 lakhs.

Irrigated area :—

Of the total cultivated area of the State, 3,34017 bighas or about 6 per cent is irrigated by the above means of irrigation. When compared to Bombay where the percentage of irrigated to the cultivated area is only 1·69, Baroda may be said to have good irrigation facilities. The gigantic irrigation projects have been taken up only recently and till they mature and yield results completely, irrigation in the State must depend largely upon well-water, the condition which obtains at present. Of the 6 percent of the area that is irrigated, nearly 5·04 per cent is irrigated by well-water.

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CHAPTER 13

VETERINARY AND LIVESTOCK

The roots of Veterinary service and Livestock improvement are found laid even in the first phase of agricultural improvement. The first veterinary dispensary was opened in 1880-81 and by the close of the first phase, there were dispensaries at Mehsana, Baroda and Amreli. The improvement in the breed of livestock was also undertaken by the issue of selected stud bulls in 1892-93 and later in 1895-96 in a scheme to issue free Gir bulls.

The second phase witnessed considerable develop- in this section. A cattle and fodder committee was appointed to consider plans of improving fodder supplies and improvement in the breed of cattle. A premium bull system was established and concessions were made available for cooperative breeding. Modern methods of castration were introduced in 1924-25. The number of veterinary hospitals increased from 3 in 1907 to 23 in 1927.

In the third phase, the section has been satisfactorily reorganised and well qualified staff is provided. The Veterinary service is made cheaper, more efficient and readily available. The number of dispensaries, which was 23 at the end of the second phase is now increased to 37; the daily average attendance per dispensary being 15 cases.

The premium bull system is further developed and two new schemes have been inaugurated for livestock improvement. The first-Kankrej breeding farm scheme-aims at supplying pure kankriej bulls for improving cattle. A special farm is maintained for the purpose.

The second, namely Rabari development schemes, are the most important of the schemes of livestock improvement. The chief cattle raising community in Gujarat is known as Rabaris. This community has been traditionally occupied in the business of cattle raising since ages. They used to graze their stock on the areas which were not under plough. Such areas were ample in the past, but as the increasing human population demanded more and more land for cultivation, grazing areas diminished proportionately, resulting in poor nutrition and productivity of the cattle and subsequent lowered financial conditions and deteriorated moral standard of the rabaris under strained circumstances.

The later effect began to be visible in repeated encroachments upon cultivated lands of the cultivators by the rabari cattle and subsequent rise in number of civil and criminal suits against them. The indirect losses caused by the production of progressively deteriorated cattle and the direct losses caused to the crops of the cultivators by such cattle are enormous from the individual and national economic point of view.

The solution of the problem lies in making up the deficiencies of the rabaris, and thus improving the economic value of the stock and the life of the rabaris. Several schemes were formulated for the purpose.

The Rabari development schemes aim at putting the rabaris in a position to produce necessary feeding material for their cattle by developing the available Government grass and waste lands and improving their stock and their conditions by carrying on their work systematically and scientifically. The schemes have two features:- (i) colonisation system, and (ii) settlement system.

The Colonisation system implies putt'ng the needy rabaris from any village from Baroda State on a consolidated block of about 600 or more bighas of land, residing their permanently and constructing houses, while the Settlement system gives about 20 to 25 bighas of local waste land per family to the resident rabaris of that village.

The rabaris would get under the scheme, the right of the land without any cost price at 25% of the normal assessment for first 5 years. This may be raised subsequently upto 60% only, so long as they stick to the fodder crop cultivation.

An amount of Rs. 10,000/- has also been set apart from Diamond Jubilee funds for providing housing and water arrangements for colonisers and supplying agricultural accessories and implements etc. to the colonisers and the settlers. From this amount each coloniser receives Rs 200/- and the settler Rs. 60 in cash or kind, as may be necessary.

The rabaris joining the schemes would work on cooperative principles in every respect and hence cooperative societies to supply necessaries and market the produce would be established.

Advantages :—

Of the many advantages of the schemes, the following may be mentioned here :—

(1) Improvement of strain of the cattle in such a way as to render cattle raising an economic industry.

(2) Reduction in the damage to the crops of Khedut, or even negation of it, if the scheme is expanded.

(3) Diminution in number of " Bhelan " or damage suits and hence more time for officers concerned for development activities.

(4) Development of idle waste lands.

(5) More production of animal products means contribution to national wealth by export etc.

(6) Improved standard of living and morals of rabaris.

(7) Lands when remain unlooked after, get iroded and deteriorated thereby. This would be stopped.

(8) Many times agriculturists purchase bullocks from foreign territories. This drain would be stopped if good bullocks can be had at home.

(9) If systematically developed, these establishments would prove to be the best means of most eloquent propaganda for livestock industry and provide valuable data.

Work done :—

Six settlements were in existence at the beginning of the year 1940-41. One more settlement was opened during the year, making the total seven. Schemes to start 3 more settlements are also ready. Of these settlments, 2 are in Patan, one in Sidhpur, 3 in Mehsana and 1 in Kadi. The settlements have in all 4735 bighas of land, of which 1604 bighas are distributed to individual rabaris for agriculture and grass growing purposes; while 3131 bighas are reserved for joint use as pasture.

One hundred and thirteen rabari families with a livestock of 679 animals have settled in these colonies. To encourage breeding, the Settlements were supplied with five bulls. Rs. 25,999 were spent on this scheme during the year 1940-41. From the progress of the scheme, it appears that rabaris are giving up their migratory habits and are taking to settled cultivation.

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CHAPTER 14

SOIL EROSION

Soil erosion is not a natural process but it is a man-created evil. It is the outcome of a reckless removal of the natural covering of vegetation with which nature seeks to protect the earth's surface from too intensive removal e. g. the uncontrolled felling of the jungle, the uncontrolled grazing of the grass of the uplands, etc.

The damage to cultivation by the uncontrolled flow of water has been recognised by farming communities for two thousand years. This is clear from the existence of terraced hillsides in many parts of the world, from the appearance of isolated bunds in Indian cultivators' holdings and from the field boundary bunds in evidence under certain conditions of better farming practice.

The question of organising measurers for dealing with soil erosion in the State was taken up by the Government as early as in 1937, when an area covering 10 villages in Vijapur Taluka on the river Sabarmati were selected for intensive experimental work under the supervision of a committee. The northern tracts of Mehsana district presented a special problem, that of encroachment by the desert of cutch in the west, and from the north as a result of the denudation of forests in the regions in which the Sabarmati, the Banas and the Shetrunji take their rise. This was placed under investigation by a committee on whose findings orders were passed by the Government in September 1939.

The next important step was taken a few months later when an order was issued on soil erosion in Amreli district which lies in Kathiawar. Two areas were taken up for systematic measures, (1) the Dhari area and (2) the catchment of those parts of Shetrunji river which lie in the State. Since then the Government have applied themselves vigorously to the task of fighting erosion on both fronts–prevention and cure. The Assistant Conservator of Forests has been deputed to look after the work as the Soil Erosion Office. He functions as the secretary of a committee consisting of the Director of Agriculture, the Chief Engineer, the Sar Suba and Conservator of Forests.

A State-aided programe of tree planting and other measures to secure conservancy of soil has been set in motion and the progress made in the work is reported to headquarters from all parts of the State.

Big holes left in the ground by rushing monsoon waters are a prolific source of soil erosion. These are being bunded up. Some have already been dealt with, including those at Ekalbara, Mujpur and Sankheda.

Nor is the question of enlightening the public on this important point neglected. A number of notes in Gujarati emphasising the importance of the question are seen issued. Several thousands of copies of the monthly Prakashan Patrika containing the details of the problem and the work being done to solve it, have been made available to the villagers even in the remotest parts of the State.

The Director of Agriculture, Mr. R. G. Allan has written two admirable tracts on the subject which should be of interest to the Provincial Governments too. One of them deals with soil erosion in Western India, and the other with the problem in Baroda State, They contain a wealth of suggestions based on careful study of the prevailing conditions.

CHAPTER 15

INDUSTRIAL GROWTH

In the foregoing chapters on agriculture, the fact of the dependance of the majority of people on agriculture for their livelihood has been inevitably thrust upon our mind. One of the greatest need to-day, therefore, for India or any part thereof, is the removal of pressure of population from agriculture. The obvious solution is industrialisation.

In those days when machine had not made its headway in India, there were a number of small handicrafts giving employment to a bulk of population. Even as far as the year 1870 i. e. by the second half of the 19th century, there were found all over the State a number of small industries, giving employment to about 18 per cent of the population. Every village and every town had a full complement of smiths, carpenters, tanners, weavers, brass-workers etc., who supplied the needs of the local people. Some towns were noted for their special manufactures : Patan for patolas, Visnagar for brass and wood-work, Kadi and Patan for cutlery, Sankheda for horn and lacquer work, Navsari for wood-carving, Baroda and Patan for silk and gold thread industry, Padra, Kathor and Nandol for dyeing and printing, Baroda for glassware, Dabhoi for turbans, Bilimora for ship-building etc. All these were hand industries carried on by artisans mostly in their homes.

These industries received a set back towards the second half of the 18th century when, under the influence of modern industrialism, factories of modern type were set up all over Gujarat and there was a great influx of cheap machine-made articles from foreign countries as well. Combined with this sudden competition of cheap articles, was the change in the tastes of the people; and this resulted in the decay of most of the hand industries.

The pioneering efforts :—

Thus the old handicrafts were slowly going out of existence while no new industries were established. This grim fact did not go unnoticed during the reign of the late Maharaja Sayajirao who, immediately after his coming to the throne in 1875, took up the work of developing the natural resources of the State, of reviving wherever possible the old industries and of introducing modern industries. From the time the late Maharaja came to the throne, he perceived the complete absence of modern industries and initiated various measures for their introduction. As a beginning a few model factories such as cotton and sugar mills were started. The people also organised a few small industries such as pencil-making, button and soap making, etc.

In the year 1884, the State pioneered the sugar factory at Gandevi. At first it was started as a joint stock concern and the State took shares for half the amount. But as this did not work satisfactorily, the State purchased the factory at a cost of Rs. 3 lakhs and worked it for some time. In 1904 the State sold it to a private owner. Soon after the establishment of a sugar factory in 1884, the possibilities of establishing a glass factory were explored and several experiments were made with sands found in the State. But the project had to be abandoned as a result of unfavouraaie reports. The enthusiasm of the late Maharaja however was not chilled by this. In 1892, he pioneered the cotton industry in the State and started a cotton spinning and weaving mill as an object lesson to the capitalists. By 1905, it was realised that the importance of the cotton industry was well understood and that private enterprise was forthcoming to start new mills and hence it was decided that the factory should be sold. The third industry that saw its rise during this period was a brick factory started by the Public Works department of the State in the year 1890 for manufacturing Mangalore tiles, earthern-ware pipes and jars. In the year 1907, the factory was sold, for similar reasons.

The State and the industries :—

Here we come to the end of the first Period (1870-90) in the history of the industrial development of the State. During this period, the policy adopted by the State was to start an industry as an object lesson to the capitalists of the State and give it over, as soon as possible to private entrepruners. This encourageed private capital to flow into the channel of industrial development and thus the campaign to industrialise the State bore fruit.

The Second Period-Laying the foundation (1890-1905):-

The second period in the industrial development of the State commenced with the early nineties. The old policy of starting new industrial ventures was continued, though with less vigour, and new instruments of industrial expansion were made use of.

Technical education :—

The most important event worth record during the decade 1890-1891 is the beginning of technical education in the State with the establishment of Kala Bhavan and Museum and sending out a number of students to Europe for training in industries. While passing order on the scheme for establishing the industrial school, H. H. the late Maharaja wrote :— " The project of diffusing general and technical knowledge through the vernaculars has been under the consideration of the Government. The proposal of Mr. Gajjar to start such an institution on the grant in-aid principle has been considered and it is thought desirable on the whole that the experiment should be made as a State concern. It is accordingly directed that the Technical Institution should be opened at Baroda *where education of the hand and the eye will be attempted side by side with that of the mind* and where instruction will be imparted mainly through the vernaculars. The object is to help the people to improve the existing industries and to introduce new ones that may be remunerative....The courses of instruction should combine theory and practice so as to turn out a more skilful artisan than at present.... Along with this central institution dyeing schools should be opened in the districts.*

The Kala-Bhavan was, therefore, established in 1890 A. D. and the following schools were accommodated therein :—

(1) School of Art. (2) School of Carpentary and cabinet making. (3) School of Mechanical Technology—first and second divisions. (4) School of dyeing and calico printing. (5) School of Agriculture, (6) School of Pedagogy—1st 2nd and 3rd grades.

On 31st July 1891, in all there were 350 students studying in this new institution—Kala Bhavan.

Besides the Kala-Bhavan, Baroda Industrial Museum was founded at Baroda in 1894. It was divided into two sections-Sciences and Arts, the former mainly dealt with Geology and Biology; while in the Arts Section, there was a special wing for Baroda industries.

Other activities :—

The other instrument of developing the industries is communications. Accordingly railways were built all over the State. The Petlad Railway, Mehsana-

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*Administration Report 1890-91.

Viramgam railway and Mehsana-Patan railway were opened for traffic during the years 1890 and 1891.

It was during this period that the Geological and Economic surveys were undertaken with a view to explore the strength and extent of the natural resources of the State upon which rest the possibilities of industrialising the State. The geological survey was made in the year 1892 by Mr. Bruce Foote. The first industrial survey of the State was started in the year 1893. It was concerned both with agriculture and industries but so far as the later were concerned only the then existing hand industries were inquired into.

Many other concessions like loans at a low rate of interest, revised customs duties and others were given by the State. During four years falling within this period i. e. during 1891-94, a very active policy of loans was pursued. On the whole a very sympathetic policy was adopted by the State towards the promotion of industrial ventures in the State during this period.

Progress of Industries upto 1901 :—

The progress during the initial stages would naturally be slow. There were 44 ginning factories and one cotton spinning mill in the whole of the State. The Census of 1901 returned 273,313 persons or 14·2 per cent of the total population as engaged in industry. " Industrial enterprise and manufactures on the Western model are yet confined only to a few large cities. "*

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* Census of Baroda 1901.

It should not be forgotten that this was the period when foundation of the modern industrial development was laid, and as a result of the various activities of the State, a number of small industries grew up all around : flour and rice mills, cotton ginning and press factories etc., One indication of this growth is that the percentage of urban to rural population rose from 20 in 1891 to 24 in 1901.

Rapid progress (1905 to 1926) :—

The third period in the industrial progress began with the year 1905. " Under influence of the Swadeshi movement, all over the country new industries were started ; the State also took advantage of the enthusiasm of the people and extended its help to all new ventures that were started with loans and many other ways ".* During this period some important measures for the promotion of industry were taken. The most important of them were (1) the establishment of a special department of Commerce and Industries and (2) the starting of the Bank of Baroda.

Before 1905, the work of developing commerce, trade and agriculture was for a long time carried on by the revenue department with the assistance of the public works department and some of the Naib-Dewans who took personal interest in economic problems. In 1905, a separate branch was opened in the revenue department and a special officer was appointed in charge of commerce, industry, agriculture, customs and a few other allied branches. Soon after, it was found that a single officer, however capable, could not cope with the work of all these departments, and therefore, in 1906, the office of the Economic Adviser was created, and in 1907 his office was converted into the department of Commerce and Industry though at the same time he held the office of the Joint Revenue Commissioner.

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* Report of Baroda Economic development Committee 1918-19.

The Economic Adviser devoted his attention to the cotton seed oil industry, tanning and fibre industries, improvement of the cotton staple, dyeing and other industries. A large number of duties which hampered trade were abolished in 1904 and finally with a view to further stimulate trade and industries, custom duties of every kind were abolished in 1909. This spirit of industrialisation took hold of the authorities and of the prominent men of the time. It soon found expression in the establishment of Alembic Chemical works in 1907 by private enterprise. It was during this phase that the interest in cottage industries was developed. In the year 1907, an expert trained in America was engaged to make experiments in chrome leather tanning. In 1909 machinery for chrome leather tanning was purchased. Before, however, it started working a private company came forward to whom the machinery was transferred at cost. Again in 1909, a fully equipped Furniture Factory was started under the management of the former State scholars trained in Europe. In 1910, an American expert was engaged to investigate the possibilities of oil industry and the manufacture of soap and other products. It was also during this decade that a complete electrical generating plant was installed for supplying electric light and power to persons in the Baroda City.

The atmosphere surcharged with industrialisation brought forth the establishment of the Bank of Baroda in July 1908 with an authorised capital of Rs. 20 lakhs. The significance of the establishment of this institution and the role that it was to play in the industrial expansion of the State can be well understood from the speech of the then Chairman of the Board of Directors at the opening ceremony of the Bank on 19th July 1908 He said " Our object is to encourage and promote the application of capital to industries as far as possible within the State itself and a separate Bank alone will meet our needs. We will be in a position to closely study local requirements and local credit and thus be able to help local merchants with greater confidence than any outside Bank can be. " *

" All these activities have resulted in a wonderful development of industries within the short space of a few years in the present decade, ' wrote the Census Commissioner of 1911, in his review of the growth of industries. The total number of foctories rose from one cotton spinning mill and 44 ginning factories and

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* Baroda Economic Development Commitee Report 1918-19.

presses in 1901 to 86 factories of all kinds in 1911. These 86 industrial establishments had a total labour force of 9421 persons out of which 7216 were males and 2205 were females. Of these 86 factories, 39 were in Baroda district, 17 in Baroda city, 16 in Navsari district and 7 in Kadi and Amreli district, each. Kadi, though it has the largest area and population of all the districts, could show halting industrial development during the decade.

The 86 industrial establishments disclosed by the census of 1911 comprised 48 cotton ginning factories, seven cotton presses, four cotton spinning and weaving mills, one silk factory, one brush factory, four dyeing factories, one leather factory, one saw mill, one sugar factory, one water works, one opium factory, three brick factories, three oil mills, one chemical works, one rice mill one furniture factory, one tramway, one railway bridge work, one electric light company and four printing presses.

From the above classification of the industries, it is evident that cotton industry occupied the first rank among the industries of the State. Of 86 industrial concerns, 57 were devoted to this industry and of 123 perons per mille of population supported by industries, 48 were supported by this industry. The number of cotton spinning and weaving mills rose from 1 to 4 and cotton ginning and pressing factories from 44 to 55 during the decade. Second in number came wool industry which supported 13 persons per mille of population. Ceramics also supported the same number while chemical industry supported only 5 and metal industry supported only 8 per mille of population.

During the ensuing decade i. e. 1911-21, the growth of industries continued. Mr. Whitnack, the Economic Adviser, retired from the State service in the year 1909 and thereafter the Department of Commerce and Industry was separated from the joint-revenue office and placed directly under the Minister with the object that the industrial matters should receive the best attention and if possible the Head of the administration should remain in charge of it. But at this time the Director of Industries was asked to work as Registrar, Co-operative Societies also. In 1915, the department was again placed under the Joint Revenue Commissioner.

It was in the year 1915 that rules for the development of industries were made by the Government. These rules defined the orbit within which the Government assistance was to be given to the existing and new ventures in the State.

" All the well established factories continued to work well and have been expanding. The cotton mills were adding more looms and spindles and the agents of all the successful mills and dyeing factories were starting new industries also. The weak and the struggling were also rehabilitated. "

The Shree Sayaji Iron Works was added to the list of Baroda industries in 1914. It specialised itself in the manufacture of agricultural implements like plant pullers and hoes on economical scale to suit the purse of the agriculturist.

It was also during this period that Baroda Economic Development Committee was appointed to enable officers and ryots to put forward their suggestions as to how the country can be made prosperous and how material resources could be developed. The Government officers were required to submit practical suggestions after an inquiry into the methods to be employed to increase the productivity of the soil, to improve cattle-breeding, to develop the forest products, arts, commerce and industry. The Committee submitted its comprehensive report in 1919 and the Government lost no time in taking action on some of the suggestions made by the Committee.

The rules for Government assistance to the industries in the State, which were first made in 1915, were now revised and made more elaborate and liberal.

As a result of all these activities, the number of establishments rose from 86 in 1911 to 124 in 1921 and the number of persons employed rose from 9421 in 1911 to 11594-8683 men and 2911 women-in 1921. Joint stock companies also rose in number from 39 in 1911 with a capital of 66 lakhs rupees to 88 in 1921 with an authorised capital of over 8 crores of rupees.

CHAPTER 16

PRESENT INDUSTRIES OF BARODA

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In the foregoing chapter the history of the State's industrial development till 1926 has been traced. That development comprises 4 periods. Now we may come to the fifth or the present period which is the most important period and begins with the year 1926. The industrial development of the State during this period is really remarkable. The policy of industrialization of the State, which was steadily pursued during the reign of His Highness the late Maharaja Sayaji Rao, assumed, during this phase, the form of intensive drive towards industrialization under the guidance of Sir V. T. Krishnamachari, the Dewan of the State.

How far reaching have been the effects of this intensive drive can be well gauged from the fact that during this period (1927-41), the number of operatives employed in industrial concerns coming under the Factory Act rose from 17000 in 1927 to 41101 in 1941, the number of factories rose from 122 in 1927 to 148 in 1941, the paid up capital of joint stock companies rose from Rs. 319 lakhs to Rs. 1164 lakhs, and the number of towns rose from 50 in 1927 to 64 in 1941.

Before we take stock of this phenomenal development, one important factor that largely contributed towards the rapid growth of trade and industries in the State may be mentioned here, i. e. the development of port Okha.

The harbour at Okha was surveyed by the Royal Indian Marine in 1882 but the real work could not be started earlier than 1922. A sparse population in the surrounding area, scanty rainfall, poor soil, and complete absence of railway connections with other parts of Kathiawar, Gujarat and Central India,-these acted adversely against developing Okha as a port at that time.

But the enthusiasm of His late Highness helped overcoming all these difficulties and the port was completed in 1925. It was formally opened in 1926. Only within 18 months of the opening of the port, the Viramgam Cordon was reestablished and the duty on goods going beyond the cordon including those going within the State territories in Gujarat was received by the Government of India, and most of the customs revenue that would have accrued to the State as a result of the development of port Okha was lost to the State.

It was essential in the rightful interests of the State to find a way out of this unsatisfactory position and with this object negotiations with the Government of India were started for reconfirmation of the customs right to the Baroda State. The burden of carrying out these negotiations to a successful end fell mainly on

Sir V. T. Krishnamachari, the Dewan of Baroda. The agreement with the Government of India was concluded in 1936. This agreement set at rest the longstanding dispute with the Government of India about the customs duty on goods imported at, and exported from, the Baroda State ports, and the extent of the retention by the State of customs receipts on goods so imported. The main features of this agreement were described as follows by the Hon'ble Sir James Grigg in his statement before the Legislative Assembly :—

" An agreement has also been concluded with Baroda, whereby the State will retain the revenue from customs duties levied on foreign goods imported at its ports, subject to a maximum equal to the estimated revenue derived from the consumption of such goods in the territories of the State

Foreign goods which have been imported at British Indian ports and there subjected to customs duty will be admitted free of duty to the territories of the State, and goods which have paid duty at the State's ports will be admitted free of duty into British India.

British Indian ports and State's ports will thus be free to serve their economic hinterland without any obstruction arising from the necessity of securing that the customs revenue from particular imported goods accrues to the State or to the British Indian treasury, according to the location of the markets to which the goods are consigned. "

During the year 1940-41, the port of Okha yielded customs revenue to the extent of Rs. 26.24 lakhs. It will be seen in the forthcoming chapter on the finances of the State that customs have played an important part in augmenting the general revenue receipts of the State and in enabling the Government to grant extensive remissions and concessions amounting to Rs. 26.06 lakhs in 1938 in the land revenue demand. This is the greatest contribution of port Okha to the economic structure of the State, besides its contribution to the development of trade and industry. The following table will show the details of shipping and cargo handled at Okha during the year 1940-41.

Particulars	No. of vessels	Cargo imported in tons	Cargo exported in tons	Total
1 Country craits ...	853	4420	20,091	24,511
2 Coasting steamers..		2891	1918	4,809
3 Ocean going steamers .	51	35642	99,388	1,35,031
	929	42953	1,21,397	1,64,351

TEXTILE INDUSTRY

Reverting to the description of industries, we find that the increase in the number and strength of industrial concerns has been mainly in the direction of the textile trade but on the whole the industrial returns of 1940-41 show a wider variety than that of 1926-27.

The following table brings out the progress of the textile industry.

Year	No. of mills	Capital in Rs. (lakhs)	Looms	Spindles	Persons employed daily in average	Yarn produced lakhs lbs.	Woven goods produced in lakhs lbs.
1940–41	19	384	6874	325,732	23,953	398	330
1939–40	16	317	7110	332,100	20,200	332	...
1938–39	16	320	6914	334,500	19,000	344	...
1937–38	16	[illegible]	6771	324,000	18009	358	281
1936–37	[illegible]	290	6206	298,000	15294	288	212
1935–36	14	248	5865	281,000	12940	251	328
1934–35	15	260	6157	292,000	14522	276	227
1933–34	14	215	5474	272,000	13117	238	180
1932–33	14	195	4284	262,000	10629	231	158
1931–32	14	193	4300	268,000	10542	231	134
1930–31	14	170	3532	231,000	8789	212	117
1929–30	[illegible]	134	3311	225,000	8528	204	93
1928–29	11	128	2824	193,000	6974	165	74
1927–28	...	...	...	...	...	...	...
1926–27	10	...	1976	...	6250	154	...

It is seen in the above table that the number of mills in the State increased from 10 in 1926-27 to 19 (17 cotton and 2 woollen) in 1940-41. During this period the capital invested in these mills showed an increase of about 160 per cent, and the number of looms increased from 1976 in 1926-27 to 6874 in 1940-41, the quantity of yarn produced increased from 154 lakhs lbs. to 398 lakhs lbs. The number of operatives employed in these mills also increased from 6250 in 1927 to 23,953 in 1941. The cotton consumption of these mills averages to about 1,20,000 bales per annum, and they produce 32 million pounds of cloth. The war has acted as a great stimulus and most of the mills are at present working day and night.

Of the 17 cotton mills, 2 are spinning mills while the rest are spinning and weaving mills.

Woollen mills:—

Of the two woollen mills, the older one in the State has 1950 spindles and 64 looms. It is now engaged entirely in the production of blankets and other articles for the supply department of the Government of India. It is now manufacturing about 20,000 blankets per month.

Besides the cotton and woollen mills, there are waste cotton spinning plant, sewing thread industry and a plant to manufacture bobbins, pickers, and shuttles, supplementing the textile industry.

Waste cotton spinning plant :—

There is one waste-cotton spinning plant, with

1000 spindles which can spin yarn from 2 to 10 counts. It can produce 1600 lbs. of yarn of about 6 counts for one shift.

Sewing-thread industry :—

There is one plant working at Kalol for the manufacture of sewing thread. The present capacity of this plant is 4,000 lbs. per day for 20 counts thread. There is a proposal to extend this plant by installing more thread making machines.

Manufacture of Bobins, pickers, shuttles etc.,

There is a factory at Navsari which is now concentrating on the manufacture of bobins, shuttles and other wooden parts required for cotton and jute mills. The factory is now working almost exclusively for the requirements of jute mills of Bengal. The value of its output during the year 1940 was about Rs. 1,50,000/- The production can be nearly doubled if necessary. Another saw mill at Biliimora is also now equipping itself for the manufacture of these textile auxiliaries.

CHEMICAL INDUSTRY

Chemical industry is, next to the textile, the second largest industry in the State. It occupies an important place in the whole of India and though being the product of mainly the last phase, has made rapid progress in recent years. Besides the Alembic Chemical Works which was organised during the year 1907, several other chemical works have come into existence during this phase. They are :—

(1) The Tata Chemical Works.
(2) The Baroda Chemical Works.
(3) The Petlad Chemical Works.
(4) The Billimora Chemical Works.
(5) Other small concerns.

The Alembic Chemical Works :—

This concern is manufacturing pharmaceutical chemicals and drugs, fine chemicals and alkaloids and rectified spirit and spirituous preparations. The present annual output of pharmaceutical chemicals and drugs is about Rs. 12 lakhs in value. As regards rectified spirits and spirituous preparations, the present output is about 500 gallons a day. The total value of spirituous preparations like tinctures etc., is about Rs. 1,50,000/- per year. This company is also manufacturing certain chemicals which were formerly imported from abroad.

There are two other distilleries, one at Gandevi and another at Vyara, for the manufacture of rectified spirit in the State with a total capacity of 300 gallons a day.

Experiments have also been carried out for the manufacture of alkaloids like morphine, codeine, strychnine, caffeine and the manufacture of these on a commercial scale is being taken up.

The Tata Chemicals :—

This concern was started in the year 1939 with a paid up capital of Rs. 125 lakhs. On account of the war, there has been delay in obtaining the necessary plant for this concern but it is expected to commence manufacturing on a commercial scale very soon. This concern will manufacture soda ash, caustic soda, bleaching powder, chlorine and other allied products. The Pioneer Magnesia works at Mithapur is taken over by the Tata Chemicals and is manufacturing magnesium chloride, potasium chloride and epsom salt. This will be one of the most important chemical concerns not only in the State but in the whole of India.

The Petlad Chemical Works :—

The capacity of the plant at Petlad Chemical Works is one ton of sulphuric acid a day. Hydrochloric acid and nitric acid are also manufactured besides copper and iron sulphate and alum and alluminium sulphate from the dilute sulphuric acid. Tin crystals are also being manufactured. A small plant of 1 cwt. capacity a day has been put up for the manufacture of bicromate of potash and this has been found to be working successfully.

The Baroda Chemical Works :—

This concern is manufacturing sulphuric acid. Its plant has a capacity of half a ton of sulphuric acid a day. It can also manufacture hydrochloric acid and nitric acid and glauber's salt.

The Bilimora Chemical Works :—

This concern is manufacturing soluble oils, sizing and bleaching materials. liquid soap, woollen soap, etc., for textile mills. The annual output is about Rs. 1 lakh at present.

Other chemical works :—

There are half a dozen small chemical concerns in the State which manufacture (i) disinfectants such as phenyl, paris green, mosquito oil, and (ii) varnishes and polishes.

IRON MANUFACTURE.

Apart from the workshop of the G. B. S. Railway, which besides doing railway work also undertakes the manufacture of drilling machines, sterilizers and such other articles, there are two important iron works in the State: (1) The Sayaji Iron works and (2) The Baroda Bolt and Engineering works.

The Sayaji Iron works, as we have seen in the foregoing pages, was started in 1914. Since then it has made good progress and is at present manufacturing (1) agricultural implements (2) cast iron articles like pipes, sluice valves etc., (3) machinery for road building and (4) bleaching machines for textile mills. The works are making centrifugal castings of any specifications and are also manufacturing locomotive cylinders and diesel engine cylinders from centrifugal castings which were formerly imported from the continent of Europe.

The Baroda Bolt and Engineering Works :—

This concern is manufacturing (1) Nuts and bolts and (2) Dogspikes and rivets.

As regards the manufacture of bolts and nuts, the capacity of this concern per day per shift is about 5 cwt.

for articles in smaller sizes and 1 ton per articles in large sizes. At present they are working one shift only and the output can be doubled if necessary.

OTHER INDUSTRIES.

Salt Industry :—

A joint-stock company was started in 1928 with an authorised capital of Rs. 10 lakhs for manufacturing salt and allied products in Okhamandal which offers excellent natural facilities for such manufactures. The Salt works at Mithapur situated on the north west corner of Kathiawar produce salt of superior quality which is mostly exported to Bengal. The average production of salt was 50,000 tons a year during the period 1933-34 to 1938-39. The production reached the maximum level in 1939-40 when 75,000 tons of salt was produced and there are still great possibilities of increasing the output.

Cement Industry:—

Okhamandal, during this phase, became the centre of a number of industries. Besides the Tata Chemical Works and Okha Salt Works mentioned above, the Dwarka Cement Company was floated in the year 1929. It is at present working under the management of the Associated Cement Companies Limited. Its production has increased from 9,550 tons of cement in 1929-30 to 1,20,000 tons in 1939-40.

Match Industry :—

The match industry of the State came to existence during this period. There are at present three factories in the State-one each at Baroda, Petlad and Billimora. The match factory at Petlad is the older one, it being started in 1929-30. The match factories at Baroda and Billimora were started in 1930-31 and 1933-34 respectively. The production of the Petlad Match Factory was 4,77,482, gross match boxes during the year 1940-41 while the Billimora Factory produced 899 gross match boxes and 15,632 Bengal lights.

Sugar Industry :—

Sugar industry is mainly located in Gandevi taluka of Navsari district. The sugar factory at Gandevi crushed 4,98 lakhs Bengal maunds of sugar-cane in the year 1940-41. During the same year, its production of sugar amounted to 40,416 Bengal maunds of sugar and 16,388 maunds of molasses.

Refining of China clay :—

Deposits of China clay which can be used in textile mills are found at Ransipur in Mehsana district. The output of refined china clay is at present about 1400 tons per annum, and as a result of improvements in the plant, which are under progress, the output will soon be doubled. A china clay factory is also being organised by private individuals in Baroda city for manufacturing china clay articles. The Government have sanctioned a loan of Rs. 50,000 for the purpose.

Manufacture of Rubber mechanicals :—

The Gujarat Rubber Works Ltd., Baroda is manufacturing moulded rubber articles used in machinery. The following are the main classes of goods manufactured:-

1. Rubber rollers, 2. Ebonite roller. 3. Ebonite sheets, 4. Moulded rubber articles, 5. Trolley wheels.

These goods were formerly imported from abroad but are now supplied by this concern to textile mills, sugar and paper factories, power houses and cement factories. The value of the present annual output is about Rs. 15,000

NEW CONCERNS.

Several new concerns have been started. The most important of these are :-

(1) The Pankaj Products at Baroda, with a capital of Rs. 0. 25 lakhs for the manufacture of textile auxiliaries, anti-gas mixture, sanitary materials, soap, perfumes etc.

(2) The Hindustan Colour, Chemical and Manufacturing Company Ltd., at Kathwada with a capital of Rs. 15 lakhs to manufacture modified starches, other bleaching agents, sulphuric and hydrochloric acids, etc.

(3) The Brass Rolling Mill, with a capital of Rs. 0·5 lakhs for manufacture of brass and copper sheets.

(4) The Vijaya Enamel Works with a capital of Rs. 1 lakh for manufacture of enamel wares and sanitary articles.

New Schemes :—

Besides these, there are several schemes of starting new industries in the State, the most important one being the scheme of starting paper mill for the manufacture of writing paper, draft paper and straw board. Bamboo will be the chief material to be used and the rich jungles of Navsari district having such raw materials in plenty, the factory is to be situated there. A joint stock company with a capital of Rs. 30 lakhs has been floated by private individuals for the purpose. This enterprise is likely to give employment to about 1000 inhabitants of the Raniparaj areas, incidentally stimulating trade and commerce in the State in general. To encourage this enterprise, the Government have granted many concessions, the chief of which are :—

1 The Government will buy preference shares of the company bearing not less than 5 per cent interest to the extent of 20 per cent of its subscribed capital on certain conditions.

2 The royalty of the State for 25 years will be fixed at one per cent of the net profit accruing to the company, during which period the factory will be permitted to function on a monopoly basis.

Another effort to start a paper and paper-bag manufacturing factory in the State is made with the Government help. Besides these two projects for the manufacture of paper, there is one more for starting a hand made paper factory at Vyara. The Government have granted financial concessions for the purpose to a man who has received training at Wardha and Sodepur in paper making.

Another important scheme is for the manufacture of pencils and a factory for this is to be started at Petlad. Some machinery has already arrived from Japan and it is expected that this factory will commence operations soon. A factory for the manufacture of starch from wheat and maize has been recently started at Petlad. It will have a capacity of 1 ton per day, to start with. The factory has already commenced manufacture of wheat starch. The fourth important scheme is that of starting a factory with financial help from the Government for the manufacture of brushes of different kinds such as household brushes, machine brushes etc. Two other important concerns are also being started in Baroda city with Government help. The first is the Baroda Asbestos and Paint works Ltd., with a capital of Rs. 2·5 lakhs while the second is a Biscuit factory with a capital of Rs. 1 lakh. As a measure of encouragement, the Government have agreed to subscribe to 20 per cent of the share capital of each of these two concerns on the condition that a substantial proportion of their shares are subscribed by the public. Manufacture of catechu also forms a part of the industrial programme of the State. The forests of Navsari district offer excellent opportunities for this. The Government have therefore given a contract for the manufacture of catechu, as a result of which about 700 persons have got employment and 6100 maunds of Katha have been manufactured during 1940-41. Now remains to mention the important concern of manufacturing hurricane lanterns undertaken by Kathiawar Industries Factory with Government help.

CHAPTER 17.

VILLAGE INDUSTRIES

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In a country where the majority of the people live in villages and depend upon agriculture, the question of village industries is bound to assume great importance. The non-economic character of Indian agriculture, the spare time of the Indian agriculturists and increasing pressure of population upon agriculture are a few of the many factors that make revival of old village industries and establishment of new ones, a great need of the hour.

In the preceding chapter on Industrial growth, we have observed that interest in village industries in the State began to be evinced towards the beginning of the present century.

Twofold question:—

The question of village industries is twofold. They are necessary both as subsidiary occupations and as independent occupations. Much has been said about rural unemployment which make subsidiary occupations necessary. Though the whole problem of rural unemployment requires a detailed and careful study of the local conditions, there is no denying the fact that rural unemployment is a live question in India staring everyone in the face.

SUBSIDIARY INDUSTRIES

The first need of our villages is the need of revival and strengthening of village industries that village people can carry on in their free hours, i. e. subsidiary industries. Hand-spinning, hand-weaving, eri-rearing, rope and lace making, embroidery, artificial flower making and others are some of such industries that-are found to exist in the State.

Handloom Industry :—

Of all these industries, handloom spinning and handloom weaving stand foremost in Baroda, as elsewhere in India. The recent survey carried out by the industries department of the State estimates the number of handlooms to be 14 to 15 thousands in the whole of the State. Nearly 45 per cent of these looms lie idle practically the whole year round. Of the remaining ones, the majority are occupied in weaving cotton, only very few being utilised in weaving silk, wool etc. About 35000 persons get livelihood from this industry.

Handloom weaving centres:—

A notable centre of handloom spinning and weaving in the State is Chalala. A Khadi Karyalaya was established there on 1st January 1938 under the supervision of All India Spinners' Association. It has been receiving considerable help from Baroda Government also, of which the subsidy of one anna per yard of khadi produced may be specially noted here. The institution has shown very good progress within a short period of about 3 years.

Besides Chalala, Khadi centres have been opened at Amreli and Varsda under this organisation. The total number of employees of all the centres was at first 198, but it rose to 732 by the end of the year 1939. Khadi measuring 8,499 square yards and worth Rs. 337 was produced in the year 1938, while in the year 1939, 36,558 sq. yards wortn Rs. 18,762 and in 1940-41, 42,363 sq. yards worth about Rs. 22000 was produced. By the end of May 1940 the Chalala centre alone produced khadi worth Rs. 7,000 and yarn worth Rs. 4,250. These activities of Chalala centre have induced farmers as well as non-farmers to take to spinning.

The Chalala centre stands high among the ten centres working in Kathiawar under the supervision of the All India Spinners' Association. Owing to increase in production, the institution had disbursed Rs. 4,110 in the year 1939, Rs. 13,560 in 1940 and Rs. 20,209 in 1941 among the workers of Chalala, Amreli and Varasda centres situated in the State.

There is another Khadi centre at Visnagar working under the supervision of All India Spinners' Association. This centre distributed about Rs. 1634 as wages to 804 persons.

Eri silk cottage industry :—

This industry has been introduced in the State only very recently. A scheme for training cultivators in ericulture was sanctioned by the Government in 1939 and a specialist was obtained from the Government Silk Institute at Bhagalpore. Training classes were opened at Devli and Kachhiawadi in Kodinar and Navsari talukas respectively. Eighty four persons in 8 villages of Kodinar taluka and 7 persons of Kachhiawadi in Navsari taluka were trained in these classes. The eri-silk eggs reared by these classes have been declared to be sastisfactory by the Government Silk Institute, Bhagalpore. Demonstrations in eri silk culture were given at exhibitions held at Amreli, Vyara, Baben, Dhamdachha, Baroda and other places. During the year 1940-41, 133 persons were supplied with eri-eggs. They reared 135,186 cacoons weighing 108 lbs.

INDEPENDENT RURAL INDUSTRIES

The second aspect of village industries is the need of removing surplus population from agriculture. There are a number of landless labourers everywhere in our midst and if they could be employed in some industry, agriculture would be free from the pressure of maintaining such people. These types of industries require a complete survey of the local raw materials and also a study of the manufactures that could be obtained out of them. If this task is patiently carried out, it will revolutionise the whole rural site and make the villages small smiling spots. The following are some of such independent rural industries obtaining in Baroda :—wood-carving, tanning and manufacturing leather articles, metal work, lacquer work, oil pressing, pottery, soap making, manufacture of perfumes, basket making, glue making etc.

Leather Industry :—

The important centers of tanning in the State are Tarvada, Patan, Mehsana, Visnagar and Dabhoi. The Sarvodaya Mandir at Tarvada which aims at developing tanning and production of leather articles on a cottage industries scale is the most important centre of leather industry. The industry is making good progress and full advantage is being taken of the facilities afforded by the State for imparting training in technique. The number of students receiving such training has increased from 16 to 35 in 1940. To meet increasing demands and afford extended facilities for such training, 2 more classes were opened in 1939-40, thus making a total of 4 such classes in the State.

A tanning factory has also been started at Patan with Government help. This factory has made good progress and is trying to export tanned skins to England for fetching higher prices.

Glue making:—

In India, glue is manufactured in the Punjab and in Mysore State on a cottage industry scale. However probably there is not a single glue factory in the whole of India. Moreover glue produced in India is of an inferior quality and for superior quality of glue we have to depend upon foreign sources.

Baroda State has undertaken an experiment in glue manufacture in the State. A glue expert has been appointed and the experiments are carried out in the Diamond Jubilee Cottage Industries Institute, Baroda.

The materials used in manufacture of glue are sheep head, skins from butchers, raw bones etc. In the experiments conducted in Baroda, fleshings from the local tannery are used. The process of glue making can be classified into four parts :—Preliminary treatment, extraction of glue, evaporation of glue liquor, setting and drying of glue.

It has been calculated that on an investment of Rs. 700, it is possible to produce one maund of glue daily and thus to earn a daily profit of about Rs. 6.

Poultry :—

This activity is carried on under the supervision of the agriculture department. The scheme has been in operation since 1937 and a Special officer is in charge.

To popularise and spread this industry, poultry development centres have been organised in the State. These centres may be divided into two groups :— 1. Those managed by Government and those managed by the poultry farmers. In all, there are 24 such centres to day, 16 being managed by poultry farmers. Every poultry farmer is given a subsidy of **Rs. 200/-** for implements and purchase of breeding cocks. During the year 1940-41, 3000 eggs and 126 breeding cocks were distributed in different villages by these poultry farmers. Each poultry farmer reared nearly 100 birds during the year.

Besides the farms developed by the poultry farmers, there are departmental farms which issued during the year 163 cocks and 1510 eggs for hatching. A Central poultry farm has also been developed to supply pure bred birds to the chicken farmers and the public when required.

Financing the cottage Industries.

There are numerous difficulties in the way of the cottage industries, the most important one of which is that of finance. Villagers have very little finance, either to purchase the raw materials or to postpone the sale of their finished products till better prices are available.

A very happy feature of Baroda is that the Government take a very keen interest in the economic uplift of the village people. A sum of Rs. 1 crore was donated from his private purse by H. H. the late Maharaja Sayaji Rao for the purpose. Rs. 1 crore more have been donated from his private purse by H. H. Maharaja Pratapsinh Gaekwar. Besides these two donations, there is Diamond Jubilee People's Trust Fund created out of the savings effected from contributions made by the people of the State at the time of the Diamond Jubilee of H. H. late Sayajirao.

The main object of these funds is to effect the social and economic uplift of the masses. A stress is laid on the development of the cottage industries, the schemes leading to the development of which, financed by these funds, are as under:—

1. Diamond Jubilee Cottage Industries Institute, Baroda.
2. Poultry keeping.
3. Scholarships for training in various handicrafts.
4. Free financial aid for purchase of implements, etc.
5. Financial aid to cooperative societies of backward people.
6. Financial grants to institutions.

Besides the above funds, an amount of Rs. 28000 is provided in the State Budget every year for granting loans to cottage industries. The Director of Industries has got powers to grant loans upto Rs. 200 in each case, either for buying raw materials or for implements to persons engaged in different cottage industries. These loans are given free of interest and are repayable in small monthly instalments ranging from Re. 1 to Rs. 4, according to the amount of loan. The scheme was sanctioned in December 1937 and since then the following loans have been granted.

Tanning.		Weaving.		Calico Printing.		Other industries	
No.	Amount. Rs.	No.	Amount.	No.	Amount.	No.	Amount. Rs.
316	22,495	422	27,428	2	300	29	1,075

It will be seen that during the last 3 years, 769 loans amounting to Rs. 51,298 were given.

An amount of Rs. 2000 has also been recently sanctioned by the Government for distributing modern types of implements like spinning wheels, carding bows, looms, accessories etc. to such cottage workers as spinners, weavers and others at half the cost price.

TRAINING FACILITIES

One of the stumbling blocks of cottage industries is the competition of the factories. Village industries cannot hope to thrive unless they can monopolise certain articles by specialising in designs, knitting, colours etc. But this the villagers--ignorant and illiterate as they are, will not be able to do. It is therefore necessary that they should be taught cheaper processes and special designs. The Government therefore has established the Diamond Jubilee Cottage Industries Institute with a view to impart practical training in improved methods of work in various cottage and small industries to sons of artisans and the unemployed, and to organise the marketing of the products of various cottage industries in the State.

The Diamond Jubilee Cottage Industries Institute is the central institution of the State. There are at present 7 classes working in the Institute with about 60 boys studying in all of them.

Besides this Central Institution, training classes are run at various places in the various districts of the State for training in tanning, spinning and weaving, calico printing, eri rearing and bee keeping. In all 20 such classes were conducted at different centres during the year 1940-41 and about 525 persons were trained.

Scholarships :—

With a view to encourage people of the State to take full advantage of the above described training facilities, a sum of Rs. 10,000 has been alloted from the Diamond Jubilee People's Trust Fund for giving scholarships for training in different cottage industries in as well as outside the State. The following table shows the number of students who received scholarships and the total amount spent during the years 1938-41.

Name of class	Total number of students	Amount paid Rs.	Amount sanctioned Rs.
1 Dyeing and Calico Printing class ...	22	1,461	1,655
2. Block Engraving class ...	18	1,320	,595
3. Lacquer Work class ...	2[illegible]	1,676	1,800
*4. Leather work class ...	21	1,925	1,400
5. Metal work class ...	45	2,616	3,600
‡6. Brass stool class ..	21	1,437	1,400

* This began from 7-7-1939. ‡ This began from 2-2-1940.

Marketing facilities :—

To advance the cause of cottage industries in the State and to help buyers and producers, the Government decided to keep show room-emporium-in the Diamond Jubilee Cottage Industries Institute at Baroda for a display of the products of arts, crafts, cottage industries and other useful articles manufactured in the State. Recently a store for promoting the sale of Visnagar wood engraving goods has been started in Baroda with the Government help.

The show-room in the Institute is far away form the city and not much suitable for the purpose. The Government should organise separate show rooms or stores in the heart of the city for each industry. Showrooms should also be put up at the important commercial centers in India also.

The last but not least is the obstacle of the villager himself. His old and orthodox ways, his expensive habits, his pessimistic attitude and his lack of broad outlook are the main difficulties in the way of cottage industries and as long as a fresh optimistic attitude is not infused into the villagers, all efforts to develop handicrafts may not serve the purpose fully. It is good that the Baroda Government have not neglected this important aspect of cottage industries and have made provision for demonstrations, exhibitions and propaganda. In fact the question of cottage industries is more a question of organising, financing and marketing than of improving the technique. The greater the attention devoted to these aspects, the nearer will be the goal.

CHAPTER 18

THE STATE AND THE INDUSTRIES

In India where generally the capital is shy, the State has often got to assume the role of the entrepruner. The present industrial development of the State is mainly the result of the efforts of the State authorities.

Right from 1881, when His late Highness Sayajirao assumed the reins of the State, incessant efforts have been made to build up the industrial structure of the State. It is only during the last two decades that private enterprise seems to be actively coming forth. Even today, the role of the State in the industrial development is not only important but may be said to be even indispensable.

State aid classified :—

The Government encouragement to the industries of the State mainly assumes the following forms :—

(1) Pioneering efforts, (2) Financial help,
(3) Concessions of all sorts, (4) Technical education,

(5) Investigations and advice, (6) Labour welfare activities.

Pioneering efforts :--

When His Highness the late Maharaja assumed full powers of the State in 1881, there were practically no established industries in the State. Therefore he steadily pursued the policy of pioneering several industrial enterprizes in the State, such as a cotton mill, a sugar factory, a brick factory, and a leather factory. He pioneered in the field of industry as in various other spheres and gave the lead to the entrepruners of the State. This served as an object lesson to the merchants and to the industrially minded people, mostly of the State, who were thus encouraged to start private concerns.

Financial help :—

Financial help is and was the chief feature of Government encouragement to the industrial enterprizes of the State, at present as well as in the past. Though the policy of granting liberal financial help to the nascent industries has been vigorously pursued at all stages of the history of industrial development, yet there have been certain periods of marked activity. They are as under :—

1. 1891-1894.
2. 1908-1909.
3. 1914-1920.
4. 1931-1941.

During the first period about Rs. 2,32,000/- were advanced to 13 concerns. During the second period loans to the extent of Rs. 2,90,000 were granted to three concerns. During the third period loans exceeding a lakh of rupees in each case were sanctioned to 15 proposed industrial concerns, the total amount being about Rs. 80/- lakhs. During the last period i. e. 1931–41 loans to the extent of Rs. 6,30,50J were granted to 45 concerns. This is over and above the sum of Rs. 25 lakhs which has been subscribed as share-capital of the Tata Chemicals. All these go to prove that a bold policy has been followed by the State to promote development of its resources.

A special feature of the loan policy of the State during the decede 1931-41 is the sanction given to a special grant of Rs. 28,000/- every year for granting small loans, free of interest to various cottage industries.

The loan policy of the State during the decade 1931–41, reveals not only a marked increase in the number and amount of loans given but also reveals certain important developments which are particularly helpful for the development of small industries. In the first place, these loans are increasingly being given to comparatively small industries. Secondly the terms for granting these loans have been more liberalised in respect of the rate of interest, the period for which the loans are granted and the nature of security taken. The liberalisation of government policy in these directions has enabled many of the small industries to receive the benefit of financial help from Government which they would not have otherwise received.

?. CONCESSIONS TO INDUSTRIES

Over and above the direct financial help given to the industries, many concessions which can be grouped as under are also given :—

*Particulars	Number of concerns to which facility is granted
1. Exemption from terminal tax ...	35
2. Full or partially free use of natural resources ...	8
3. Tax free zones ...	8
4. Subscription to the share capital ...	4
5. Provision of technical experts ...	3
6. Conscession in water rates ...	13

*The figures are for the years 1935-41.

Technical Education:—

The facilities for technical education in the State are fairly wide and comprehensive. Besides the central institution known as Kalabhuvan, facilities for technical training are available at G. B. S. Rly. workshop, district industrial schools at Petlad, Patan and Amreli, at J. N. Tata Hunnarshala, Navsari and Chimnabai Industrial Home, Baroda.

As we have seen in the chapter on Industrial Growth, Kalabhavan was first established in 1890 and its work was divided into 6 different departments of study. Three more branches have been added since then and the total number of students has increased from 350 in 1891 to 629 in 1941. The institute now imparts training in the follwing branches of study:—

1. Mechanical Engineering.
2. Electrical „
3. Civil „
4. Chemical technology.
5. Weaving.
6. Arts.
7. Architecture.
8. Commerce.
9. Vocational High School.

Attached to the Kalabhavan is the Kalabhavan Workshop established for the purpose of practical training of students but as outside orders are likely to prove useful in their training, they are also accepted and executed.

The school at Amreli teaches carpentry, weaving and tailoring; while the school at Patan offers industrial courses in turning, fitting and smithy, wireman's courses and a carpentry course. The Hunnarshala at Navsari imparts training in mechanical engineering, cabinet making and drawing.

The Chimnabai Industrial Home is also an important institution in Baroda where women receive training in a number of useful and remunerative handicrafts for each of which a class is conducted.

The Kalabhavan, the G. B. S. Railway workshop, the Chimnabai Industrial Home and the district industrial schools are run by the Government while Hunnarshala at Navsari is a grant-in-aid institution. The State thus spends about Rs. 2 lakhs on the provision of technical education for the people of the State and about 1000 students receive training every year in all these schools.

Investigations and Advice :—

The organisation for the exploitation of resources of the State must be scientific and sound, if it is to be successful. This demands facilities for investigations into the nature and scope of the industries that could be started and facilities as regards advice helpful to the improvement of the existing industries. This has always received the attention of the Government and several industrial and geological surveys have already been carried out. But the establishment of the Development Board in 1929 marks the beginning of active interest of Government in this direction. The functions of this board are mainly advisory: to assist the development departments in framing their respective programmes of work and thus to coordinate the work done by these departments in the direction of social and economic uplift of the people of the State. Eight years later i. e. in 1937 the Government established another board known as State Economic Board which considers all questions relating to the economic development of the State and helps the development departments in executing the industrial schemes. This board also performs the functions of the Central Communications Board and the Advisory Board for railways Each district has got its economic board and this central board works as a coordinating agency in solving the economic problems of each district. Another board known as the Industries Board was also established in 1937 and it has been carrying out several experiments to investigate the possibilities of starting new industries in the State.

Besides the above boards, the Government established Technological Institute for industrial research in 1936 and placed it in charge of the Industrial chemist. This institute forms a part of the famous Shree Sayaji Jubilee Science Institute where besides this Institute, there are Public Health Laboratories, the laboratories of the Excise Chemist and the Agricultural Chemist and the laboratory of the chemistry department of Baroda College. They are all working in close consultation and collaboration.

The Industrial Research Section of the Technological Institute is carrying out the analysis of a variety of products such as typemetal, ink, starch, soap, waters, different types of ores, industrial raw materials, textile auxiliaries, etc. both for the Government departments and the industries in the State. It has evolved out a standard composition for the type-metal, which is utilised for the manufacture of the types at the Baroda Press Foundary at almost half the market price. It helps the textile industry by handling its problems in sizing and finishing of cloth, analysing raw materials, auxiliaries, boiler feed waters etc. It also advises the Public Health department on problems connected with the supply and food materials. It has investigated the conditions of manufacture of " lime washes " from china clay and has rendered help to small manufacturers by giving advice and guidance whenever these were sought. The Research Section is at present engaged in studying the polymerisation of Indian vegetable oils with a view to their utilization in the manufacture of patent leather, book binding leather, etc., and also the sulphonation of the same oils with a view to their utilization as textile auxiliaries and as wetting out, emulsifying and cleansing agents in textile industry. These investigations have been allotted to the Institute by the Industrial Research Bureau, New Delhi. The possibilities of manufacturing ultramarine, water-glass and the whitening of china clay of Ransipur Mines, are now under investigation.

Labour welfare :—

The intensive industrialisation of the State has made it necessary to safeguard the labour against possible evils of industrialisation. The Government of Baroda therefore applied with certain modifications the Bombay Payment of Wages Act, 1936 to the territories of the State in 1940. The Factories Act was passed as early as 1930 and it was revised in 1940 with a view to bring it in line with the Indian factories Act of 1934. The Trade Unions Act was also passed in 1938. The Government have also put into force Workmen's Compensation Act which is administered by the Subas of the districts. During the year 1940-41, compensation amounting to Rs. 6,509 was paid. Provision has also been made by the Government for the payment of Maternity Benefit to female operatives. During the year 1940-41, Rs. 3,036 were paid as maternity benefit. For amicable settlement of differences between the employees and the employed, the Government has also passed Trade Disputes Act.

Besides the enactment of the various Acts mentioned above, the Government have also tried to organise cooperative housing societies in order to provide cleaner and more convenient quarters to the labourers. A detailed study of the economic condition of the mill operatives has also been undertaken. A scheme for training boys educated in the boarding houses maintained by the State for the Raniparaj and other backward people, in textile mills has been put into operation. The apprentices receive a stipend of Rs. 10/- a month for a period of six months after which the mills, it is agreed, would engage them on regular wages. A sum of Rs. 3000/-a year has been sanctioned for this purpose from the Diamond Jubilee Trust Fund.

CHAPTER 19.

CO-OPERATION

Cheap Rural Credit :—

The importance of the provision of cheap credit to the agriculturists was appreciated by His late Highness Sayajirao as far back as the year 1893, when he ordered the opening of agricultural banks in some selected parts of the State. Not only that but distribution of pure and good seeds was also attempted by him through the organisation of seed depots at several places in the State.

Co-operation in India :—

In the beginning of the twentieth century, co-operation made its appearance in India. Many enthusiastic scholars and workers had devoted themselves to the problem of reorganising the economic and social condition of the Indian peasant, which was causing anxiety for some time past. Co-operation came to them as a hopeful remedy for the economic betterment of the people.

Co-operation in Baroda :—

It was in December 1904 that the co-operative credit societies Act was passed in the State mainly with a view to provide easy and cheap credit to the agriculturist. In the very year of its introduction, 24 societies were established and by 1911, the number of societies rose to 79 with a membership of 1805 and a total working capital of Rs. 1,26,567/—

A revealation:—

But a revealation soon came. It was learnt that a small and struggling farmer could not be helped by mere provision of cheap and abundant capital. Cheap credit might ruin him unless he was thrifty and able to understand the use of credit. The fundamental basis of cooperation is thrift and self reliance-qualities which need to be developed among our farming communities. But the Act of 1904 provided for the organisation of credit societies only. It was therefore necessary to amend this Act in order to allow cooperation in its varied aspect to play a vital part in the economic elevation of the people. Such an amendment was carried out in 1912 in order to permit organisations of different kinds, over and above those meant for mere finance, to be set up and enable cooperation to be tried on comprehensive basis.

Progress during 1911-21 :—

The decade 1911-21, therefore, saw an all sided and rapid growth of the co-operative movement in the State. By March 1921, the number of societies had increased from 79 in 1911 to 509 and the total membership had risen to 17590. During the same period, the total working capital rose from Rs. 26, 567 to Rs. 25,70,790. The average membership per society came to 34·5 and working capital per society came to Rs. 3207. It was Rs. 113 per member. The usual rate of interest charged by these societies was 9¾ percent.

Indeed, even then a greater part of the population remained untouched. But the position was not despairing. Members of Baroda Economic Inquiry Committee, in their report, 1918-19, say : " In the course of our inquiry, we had made special inquiry into the working of the co-operative societies and the benefits derived by the people therefrom. Everyone of the witnesses that appeared before us except one-and he did not seem to have any personal experience of the movement-told us that the cooperative societies were doing useful work and the system should be extended. "

Central Banks and Banking Unions:—

The main point that the credit societies were underfinanced and hence could not do as much as was expected of them was met by the organisation of central banks and banking unions during 1911-21. Of 503 societies functioning in 1921, 2 were central banks and 2 were banking unions. Again we should not forget that it was during this decade i. e. 1911-21. that societies other than credit societies were organised to play their part in the structure of rural economy. By 1921, about 37 non-credit societies had sprung up for co-operative milk supply, irrigation, fodder-storage and such other purposes. Of these 37, three were cooperative stores and 8 were urban societies.

Thus by the end of 1921 the co-operative movement had successfully spread over different phases of people's life, thus infusing spirit of co-operation and thereby qualities of self-reliance and thrift. Both the authorities and the people were very hopeful about the movement.

Progress during 1921-41 :—

We now come to decades nearer our time, i. e. 1921-31 and 1931-41. Much has been done during these decades to improve, enlarge and consolidate the existing organisation and to create new branches. Before we start gleaning at this comprehensive organisation, it will be well to note a few important landmarks in this story of progress of co-operative movement during these two decades.

CONSOLIDATION OF HOLDINGS

The first landmark was the application of the co-operative principle to the consolidation of agricultural holdings in 1922.

It will be interesting here to cast a glance at the historical development of the idea of consolidation of holdings in the State.

Prior to 1905, the revenue rules of the State permitted subdivision of land upto 3 bighas for Jarayat land and one bigha for Bagayat land. In that year the revenue department, for the convenience of the cultivators amended the rules and permitted the sub-division of dry lands upto 1½ bighas and of the wet lands upto half a bigha. It was in the year 1917 that a Committee was appointed by the Baroda Government to consider the steps to be taken to stop the excessive sub-division of agricultural holdings. The Committee's recommendations were divided into two groups (a) those for prevention of further minute sub-divisions and (b) those for the union of small and scattered fields. To give effect to these recommendations of the Committee an Act for the consolidation of scattered holdings was passed on 16th December 1920 The Land Revenue code was also amended laying down a restriction by which Jarayat land could not be divided below 8 bighas, Bagayat land below 3 bighas and Kyari land below 1½ bighas. The Act for the consolidation of scattered holdings was a permissive one and could be applied by notification to any village where 2/3 of the khatedars holding at least one half of the total occupied land of the village desired it. When the Act is so applied, Land Commissioners are to so redistribute the holdings that each khatedar may get, in one piece, land equal to the amount of his previous holding in small and scattered pieces put together. The rights of mortgages, tenants and others were not to be affected. The owners were to have the same rights on the new consolidated holdings as they had on its component parts.

As no substantial advantage was taken of the Act, the Government thought of the adoption of a policy to arrest subdivision of land beyond specific limits and appointed a Committee in 1922 to advise Government, as to the best means of promoting the object in view. The Government accepted most of the recommendations of the Committee and the organisation of co-operative societies for consolidation of holdings was undertaken.

As a further step in the direction, provision was made in the Partition of immoveable property Act to prevent fragmentation below prescribed limits. Still a lacuna was left for fragmentation on transfers through sale and mortgage. To prevent this, an Act regarding the prevention of fragmentation of agricultural holdings was passed by Government in 1933. Under this Act, neighbours and co-parceners were given a right of purchase of the adjoining lands under prescribed limits and intending sellers were required to inform the neighbours of their intention to dispose of their lands. This measure merely embodied the application of the principle of the law of pre-emption which obtains among Mohamedans and by custom among Hindus in some parts of Gujarat. The Act was subsequently abolished.

Within eight years of the application of co-operative principle to the consolidation of holdings, 40 co-operative societies for consolidation were organised and their number rose to 71 in 1940-41. The following table shows the work done by the societies.

Year		No. of societies	No. of members who consolidated their holdings	Bighas of land	Number of blocks for consolidation	No. of blocks after consolidation	Number of blocks reduced
1924-25	...	2	53	780	214	149	65
1925-26	...	4	5	194	47	43	4
1926-27	...	6	13	1008	43	37	6
1927-28	...	7	91	7266	1597	1373	224
1928-29	...	11	39	1494	358	309	49
1929-30	...	19	69	4817	515	483	32
1930-31	...	29	214	7054	1929	1744	185
1931-32	...	40	94	2349	574	496	78
1932-33	...	66	337	10694	2720	2436	284
1933-34	...	70	210	6299	1557	1407	150
1934-35	...	72	84	2236	698	638	60
1935-36	...	74	89	4926	850	775	75
1936-37	...	74	38	990	325	298	27
1937-38	...	77	73	2178	613	566	44
1938-39	...	79	..	..	..	..	..
1939-40	...	71	..	..	..	..	..
1940-41	...	71	..	..	..	..	..

But certain writers have despaired of the above-described processes for consolidation of holdings and they have suggested bolder means. Thus Mr. M. B. Nanavati (now Sir Nanavati), in his report on the 'Agricultural indebtedness in Baroda State', states: "the only best way is for the Government to purchase all the land, plot it out again and sell the fields by auction." Again Mr. V. K. R. V. Rao in his What is wrong with Indian Economic life, states: " a cultivator whose holding is below 5 or 10 acres will find it difficult to increase his output by any appreciable amount without an increase in holdings and without substantial investments of capital. These can only be provided for by co-operative farming. "

RURAL INDEBTEDNESS

The second landmark of these decades (1921-41) is the harnessing of the co-operative principle to the solution of the problem of agricultural indebtedness. It was right that co-operation was making its headway and was penetrating various spheres of rural life but by the very nature of its organisation, as it then existed, it was unable to tackle the most important problem—the problem of rural indebtedness. It is no exaggeration to say that the problem has a special importance of its own in India with its 7 lakhs and odd villages and its vast agricultural population.

Estimates of Indebtedness:—

In fact, one of the first administrative units in India to tackle the problem of redemption of agricultural indebtedness was Baroda. His Highness the late Maharaja

Sayaji Rao III as early as 13th July 1901 passed an order to the effect that committees consisting of the Naib Suba, the Vahivatdar, the Munsiff and 2 leading cultivators of each of the talukas be appointed. Their terms of reference included three definite questions:—

1. How far are people indebted ? What are the causes of their indebtedness ? What remedies should be adopted to relieve them ?
2. What is the best organisation for agricultural banks ?
3. What measures should be adopted to minimise the present indebtedness ?

The first attempt to estimate the volume of indebtedness of the people of the State was thus made in 1901 and the returns of the Talaties showed that out of 2,53,734 khatedars, 1,57,722 or 60 per cent were indebted to the extent of Rs. 7,57,17,190 or Rs. 460 per Khatedar.

Then in 1905 His Highness passed another order asking for definite proposals for the relief of agricultural indebtedness. Suggestions were being considered, meanwhile in December 1904 the first Cooperative Societies Act was passed. In August 1911, the questions of relieving agricultural indebtedness and of co-operative credit facilities for the agricultural class were entrusted to Mr. (now Sir) Manilal Nanavati who submitted his report in August 1912. According to that report, the total indebtedness of the ryots amounted to Rs. 8,06,44,520 and the average debt per indebted Khatedar came to about Rs. 450/-. With an average net rate of interest of

12%, each Khatedar was required to pay about Rs. 54/- annually towards interest.

Several other estimates of indebtedness were also made e. g. the estimate made by the Baroda Economic Development Committee, estimate made by the Land Mortgage Bank Committee, estimate made by the Banking Inquiry Committee and so on but all these estimates move round and confirm the figures given in the report of 1912.

Land Mortgage Banks :—

In 1916, Mr. Nanavati as Director of Commerce and Registrar of Co-operative Societies submitted detailed suggestions for an independent bank designed mainly for granting long term credit facilities. A year later, the scheme was submitted to a committee to formulate workable proposals as regards the many details involved therein. The committee admitted the necessity of such an institution, as the evil of agricultural indebtedness was very widespread. But the members were of opinion that instead of the State undertaking a big ambitious scheme with a complicated machinery, it was better to make a small beginning by utilising institutions that existed at the time. They recommended that the Central Co-operative Bank at Baroda and the Agricultural Bank at Bhadran might be entrusted with the work of liquidating old debts of the members of co-operative societies besides meeting their current needs. The Banks could do this work through the co-operative societies. To enable the Central Co-operative Bank and the Bhadran Agricultural Bank to grant special loans to societies for ten years at 5 p. c., the Committee recommended that the Government should give a deposit of one lakh of rupees to the former and half that amount to the latter for a period of ten years at 3½ p. c. per annum. The committee finally hoped that if redemption operations were started on these lines, the State might be in a position later on, if the experiment proved successful, to push on the work on a much larger scale. The recommendations of the committee were sanctioned and accordingly sums were placed at the disposal of the above two banks for the liquidation of the old debts of the members of the societies.

The original scheme of 1916 that had been put off temporarily was submitted to Government two or three times during the period between 1918 and 1923. But as the rate of interest prevailing in the money market at the time was very high, the proposals were sent back by the Government. The whole question was, however, again revived by His Highness the late Maharaja himself, in September 1924.

After a fair trial to the scheme of long term finance through the existing primary societies for the liquidation of old debts of members, it was felt that a separate agency was necessary for the supply of long term loans for the liquidation of past debts and the improvement of land. The first Land Mortgage Bank in the State was therefore started in Baroda in 1933 with a specialised machinery for investigation of title to lands and their valuation, and securing long term funds by the floatation of debentures.

Having obtained encouraging results in the working of the Baroda Land Mortgage Bank, another Land Mortgage Bank was organised on similar lines at Navsari in the year 1939. These banks gave Rs. 8,80,836/- as loans in 1940-41 generally on the security of mortgage of land at a moderate rate of 6 per cent. The banks also helped the ryots to liquidate debts amounting to Rs. 10,12 332, scaling them down by Rs. 1,70,526. Thus the borrowers had been able to secure a reduction of about 16 per cent in their owings with the help of these Banks. The working capital of these banks at the end of 1940-41 amounted to Rs. 8.76 lakhs. Government have guaranteed the repayment of the principal and interest of the debentures issued by these Banks. Free services of the Land Valuation Officer and grants towards the expenses of management are also given to these banks.

OTHER SALIENT POINTS

Second amendment in the Act:-

A further change was made in 1927 in the Co-operative Act of 1904. This amendment did not make any change in the fundamentals of the Co-operative movement but it provided for the classification of the societies for the creation of provident fund and for allowing the attachment of members' property before awards by revenue process. It also enlarged the powers of the Registrar of Co-operative Societies.

Consolidation of the movement :—

Another noteworthy feature of these decades is the adoption, during the year 1938, of the policy of consolidation of the movement, by weeding out those societies that gave no hope of improvement, by restricting the registration of new societies to genuine needs only and by reconstructing the decaying ones. Till 1941, 168 societies have been reconstructed.

Controlled Credit :--

The fifth important step taken during these two last decades is the introduction of the controlled credit system under which loans advanced are limited to a proportion of the value of agricultural products only and the repayment is assured by insisting upon the sale of the produce through the societies. Till now, only 22 societies have adopted this system.

Multipurpose societies :--

The organisation of the multi-purpose societies has been encouraged with a view to extend cooperation to non-credit work.

Last but not least is the emphasis that has been laid during the recent years on education in cooperative methods and the quality of the movement in respect of future extension.

Progress between 1927 and 1941 :—

The table on the following page brings out clearly the progress of the movement during the period 1927-41.

Number of societies		Number of non-agricultural societies		Number of societies for consolidation of holdings		Average membership per society		Percentage of population served	
1927	1941	1927	1941	1927	1941	1927	1941	927	1941
750	1303	70	263	6	71	34·3	52·1	1·2	12

THE PRESENT POSITION

There are at present 10 central financing institutions (including three banking unions), 2 land mortgage banks, 2 supervising unions, 1026 agricultural societies and 263 non-agricultural societies, thus making a total of 1303 co-operative institutions in the State. These institutions have a total membership of 67,953 persons which gives 52·1 per cent average membership per society. The working capital of these institutions is Rs. 1,09,80,974. It is estimated that the movement directly affects 12 per cent of the population, the agricultural societies affecting about 6 per cent of the village population and non-agricultural about 14 per cent of the urban population.

Primary Credit Societies :—

There are 783 primary credit societies with a membership of 21735 and the working capital of Rs. 32,97,648. They have reserve and other funds amounting to Rs. 11,68,995. In order to facilitate recoveries and check profitless borrowings, societies are advised to incorporate in their bye-laws rules relating to controlled credit basis. The credit societies in the State must be given due credit for moderating the high rate of interest on loans. When the movement was first started, the rates of interest ranged from Rs. 12½ to Rs. 9⅜ percent. They are now reduced to about 6¼ percent. No compound interest is now charged by co-operative societies. Even penal interest is dropped now. This had its beneficial effects in rural areas and the money-lenders who formerly used to charge 9 to 16 percent are now obliged to lower their rates of interest from 12 to 6 percent. The credit societies have encouraged thrift by a system of compulsory savings and Provident Fund. The credit societies have also been able to spend large amounts for charitable purposes like the construction of school buildings, provision of medicines and aid to libraries.

Before closing the review of the cooperative credit in the State, a note of thrift societies may be taken here. These societies are a special feature of the Raniparaj-backward-classes tract and excepting two, they are all women's societies. The total number of thrift societies at present is 89 with a membership of 1800 persons.

In short the credit movement has helped the organisation of many more non-credit activities and laid the foundation for the amelioration of the economic condition of the ryots.

Non-credit work :—

A noteworthy feature of the cooperative movement in the state for the last 15 years is the increased emphasis on the non-credit aspects, though the provision for such work was made as early as 1912 by amending the cooperative credit societies Act.

The non-credit work is carried on both by the credit institutions and non-credit institutions. Of the former, the Central Bank and Credit Societies have considerable credit work at their credit. The Central Banks undertake the business of joint-purchase of the needs of and sale of the produce of agriculturists, while the agricultural credit societies help the introduction of better kind of seeds, new varieties of crops and increased use of artificial manure.

Among the non-credit institutions are found purchase and sale societies, production societies, insurance institutions, societies for consolidation of holdings and others.

CO-OPERATIVE MARKETING

Of fundamental importance of these aspects of non-credit work, is Co-operative Marketing. The individual cultivator is a very small unit compared to the highly organised groups of the buyers and distributors of his produce, armed as they are with specialised knowledge and superior resources. To combat against them, some form of combination on the side of agricultural producers was needed and hence the growth and development of co-operative sale societies inspite of the lack of skilled technical advice and guidance, of expert knowledge of market conditions and trend and ability for proper business management, over and above the opposition of the vested interests of traders. These societies mostly function as agents of their members for sale of produce on a commission basis. The produce of different members is pooled, graded and sold in common as and when it is considered best, the members agreeing to take the average price secured in the season. There are at present 37 cotton sale societies, 2 groundnut sale societies, 1 sugar cane growers' association, 2 pure milk supply societies and 3 other kinds of sale societies.

Cotton Sale Societies:—

The Cotton Sale Societies are found doing very good work, especially in the Navsari district. They have infused a new life in the people.

As a further step towards co-operative marketing of cotton, an idea of co-operative ginning and pressing of cotton originated out of a genuine need of giving protection to sale societies and individual members from being exploited by the capitalistic gin owners, who used to combine themselves into an association and charge higher rates for both these processes. Two factories run on co-operative basis were established. These co-operatives ginned and pressed 8812 bhars of cotton. They were successful in bringing the rates of ginning and pressing from Rs. 6/- and 8/- respectively to Rs. 3-4-0 and 4-8-0 respectively and these are now more or less normal rates throughout the whole tract, i. e. for the private ginning and pressing also. These co-operatives usually allow a rebate in both these charges to their members. A third co-operative ginning and pressing factory has been recently set up at Samlaya in Baroda district and began its work in the last season.

Co-operative supply of goods:—

Another feature of co-operative marketing is co-operative supply of goods. There are eight supply societies of which 5 are meant to supply household needs and 3 supply better seeds, etc. They supplied goods woith Rs. 54,942 during the year 1940-41.

Effects of Co-operative Marketing:—

The Co-operative Sales and Purchases have confirmed upon the farmers who have joined these sale and purchase societies, the following benefits which non-members find it difficult and impossible to get :—

(1) Possibilities of cheating by incorrect weights and scales are minimised.

(2) Adequate prices for their produce are obtained and most of the advantages of collective sale and purchase on a larger scale are secured.

(3) Financial accommodation obtained from their societies prevents hasty and unprofitable sale of goods.

(4) The middlemen's profits disappear.

(5) Better methods of getting good seeds, manure, implements etc., through their societies are available and the produce becomes amenable

to better grading, resulting in establishing prestige and obtaining better prices.

The Government have always encouraged these societies through grants of subvention to every new society for the first three years. This has greatly helped the development of this aspect of co-operative movement in the State.

Rural Reconstruction and development associations :—

There are 31 rural reconstruction and development associations in the State. They help to devise ways and means to meet the common needs of the villages, which comprise sanitation, medical help, primary educational facilities, free libraries and reading rooms, improvement of village tanks and roads and development of rural industries like spinning, weaving, preparing bed-tapes and other articles of agricultural use.

Non-Agricultural Societies:—

To complete the picture of co-operative movement in Baroda State, it would be useful to give a short summary of the non-agricultural side of it in the State. As stated in the beginning of this chapter, there are 263 non-agricultural societies. The principal types of these societies are Urban Banks, Government Servants' societies, Students' stores and Backward Class societies comprising societies for weavers, tanners and sweepers. The other societies include flood relief, insurance, electric supply and house-building societies. They possess a membership of 26,679 which comes to an average of 103 members per society. The share and working capitals of these societies amount to Rs. 6,76,777 and Rs. 44,47,007 respectively. Reserve and other funds total Rs. 2,80,588.

General observations :—

The economic depression, which continued for a series of years seriously affected the movement in Baroda as it did throughout India and a large number of credit societies came to be hard hit; but the movement has definitely turned the corner in the State and is on its way to re-establish on sound lines as a result of the policy of reconstruction and rehabilitation of bad societies and the introduction of the principle of controlled credit. At the base of the financial structure of co-operative credit are still the primary societies, credit and non-credit, agricultural and non-agricultural. The agricultural societies far out-number the non-agricultural as might be expected from the predominantly agricultural character of the country, and credit societies are, again, far more numerous than non-credit societies.

Co-operation is the movement of the people, for the people and by the people. The expansion of the movement throughout the country side, therefore depends on the people themselves and the success of the movement depends on the attitude of the average member to his society and on proper leadership, feeling of solidarity and sense of individual responsibility. Much has been said on the Government initiating of the movement in the early stages but that should not prevent the sound development of the movement.

CHAPTER 20

FINANCES OF THE STATE

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Only a few duties except the main one of defence against foreign aggression were shouldered by States in their primitive formation period of existence; and for such defence, the members of the State then rendered personal military service. However when a State developes into an advanced stage, it has to create administrative machinery for a number of functions such as defence of private property, establishment of law and courts of justice, promotion of public welfare by providing facilities for education, sanitation etc. and by providing for the growth of agriculture, commerce and industries.

Every modern State, therefore, implies some kind of elaborate administrative organisation which in its turn implies items of expenditure. As a State becomes more and more advanced, its administrative machinery becomes more and more elaborate and consequently more and more expensive.

The finances of the State therefore deal with those activities of the State which are undertaken for obtaining and applying the material means necessary for fulfilling the proper functions of the State. These activities fall within three main groups :—

1. Public revenue.
2. Public expenditure.
3. Public assets and liabilities.

PUBLIC REVENUE

The total receipts of the State for the year 1941-42 amounted to Rs. 252·45 lakhs. We learn from the following table that the multiplying duties of the State have been generally accompanied by the increasing receipts. The slight fall in the revenue in 1901 and 1941 is due to the grant of substantial land revenue reduction and other concessions.

(*Figures in lakhs of rupees*)

1881	1891	1901	1911	1921	1931	1941
165·85	177·45	136·61	171·72	208·55	259·66	252·45

It may be remarked that there has been an increase of 53% in the revenues of the State. As will be seen later on, during the same period the expenditure of the State has risen by 82%.

ANALYSIS OF THE INCREASE

If we cast a glance at the State budget, we find that the main sources of revenue to the State are land revenue, excise, customs, railways, interests etc. The following table shows the principal heads of revenue in which there have been significant changes during the last seven decades.

	Heads		1880-81 (Rs. lakhs)	1940-41 (Rs. lakhs)
1.	Land revenue	..	112·34	95·07
2.	Customs	..	12·41	27·79
3.	Railways	..	·86	21·92
4.	Interest	..	9·34	19·72
5.	Forests	..	..	4·64
6.	Excise	..	2·77	27·85

In the above table, the figures for the year 1880-81 are taken from the Baroda Administration Report of that year wherein they are given in terms of Baroda coin. From the same report we learn that one hundred British coins were in that year equal to 115-5-1 Baroda coins. The figures in the above columns are in British coins, they being obtained by converting Baroda coin figures into British rupees to facilitate comparison.

It may be noted from the above table that railways show the greatest increase in revenue. From a very negligible source of revenue in 1880-81, they have now become an asset to the State, yielding Rs. 21.92 lakhs every year.

Second in importance are the customs duties which have grown from Rs. 12.41 lakhs in 1880-81 to Rs. 27.79 lakhs in 1940-41. This increase is mainly due to the development of port Okha.

The receipts from interest have also more than doubled; excise also shows an appreciable increase.

The receipts from land revenue have on the contrary decreased from 112·34 lakhs in 1880-81, to Rs. 95·07 lakhs in 1941.

Land revenue:—

There is no need to reiterate the oft repeated fact that to any Government in India-be it of any Indian State or of British Indian Province-land revenue is the main source of revenue. We have already seen in the chapter on the role of agriculture as to how much percentage land revenue contributes to the total receipts of the various Indian States and British Indian Provinces. It now remains to study here the variation in the percentage of land revenue to the total revenue of Baroda State during the decades covered by this book.

The total receipts of the State in the year 1880-81 were Rs. 143·82 lakhs (Baroda coin), out of which Rs. 97·42 lakhs were contributed by land revenue. This means that of the total receipts, as much as 67·7% were derived from land revenue, while the contribution of the other sections of the people was only about 32 .

In 1890-91 the total receipts were Rs. 177·45 lakhs while receipts from land revenue were Rs. 116·07 lakhs or 65·4%. During the decade 1881-91, the land revenue burden of the people, therefore, decreased by about 2·3%, inspite of the increase in the total receipts of the State.

The successive decades also show the same tendency.

Year	Total receipts in lakhs	Receipts from land rev.	Percentage of 3 to 2	Increase or decrease
1881	143·82 (Baroda coin)	97·12 (Baroda coin)	67·7	..
189.	177·45	116·07	65·4	−2·3
1901	136·61	87·69	64	−1·4
1911	171·72	103·15	60	−4
1921	208·55	111·25	53	−7
1931	259·66	117·48	45·2	−7·8
1941	252·45	95·07	37·6	−7·6

From the above table it is clear that decade after decade agriculturist's burden has been lightened as shown by the fall in the percentage of land revenue to the total receipts of the State. The greatest reductions namely, 7·8 and 7·6 per cent are noticed during the decades 1921–31 and 1931–40. The reasons are obvious: the substantial reductions granted owing to the flood of 1927 and adverse seasonal conditions during 1931–41 as a result of the depression of 1929.

One significant fact emerges out of this discussion. It is that with the growth of public revenue in the State, there has been a growing decrease in the percentage of land revenue definitely proving that the State exchequer is not an increasing burden on the agriculturists.

INCOME-TAX

The old method :—

" In the old regime, the revenue of the State was not collected by government agency as at present, but was farmed out to individuals."* These farmers forced upon the ryots many exactions of different kinds and in course of time these exactions assumed the form of regularly payable taxes. Thus in different places different kinds of veros-taxes-came into existence and there was no uniformity in their collection.

Agricultural and non agricultural taxes:—

From the commencement of his rule, His Highness the late Maharaja aimed at finding means to lessen the burden of taxation of the poor. He abolished taxes tagged on to agriculturists in the talukas where survey settlement was introduced. As regards the non-agricultural taxes, a survey of them was made by the Survey & Settlement Commissioner in 1892. It was found out that there were 182 non-agricultural taxes of which 31 realised Rs. 10/- or less, 16 realised Rs. 11/- to 20/-, 27 realised Rs. 21/- to 50/-, 18 of them realised Rs. 51/- to 100/- and 19 of them realised Rs. 101 to Rs. 212/-. The report of the Commissioner, therefore, recommended the abolition of all non-agricultural taxes excepting the major nine ones.

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*Gazetteer of Baroda State-Desai and Clarke.

Aypat vero or Income-tax:—

It was in 1896 that the income-tax was first introduced in the State. In that year, His late Highness Sayajirao visited Padra, a town very near Baroda, and in response to the request of the inhabitants, he asked the Suba of Baroda district to submit a scheme of the abolition of a number of small taxes.

The Suba recommended Aypat vero or income tax, which was first introduced in the whole of Padra Taluka, then in the whole of the Baroda district and finally, as its working proved satisfactory, in the whole of the State in the year 1904. In the beginning, there were different rates for the towns and villages but by 1904, they were done away with.

Minimum taxable income:—

The new Aypat vero brought a net increase of Rs. 16000 in revenue over the amount realised by the taxes that were obolisted. The Government therefore, raised the minimum taxable income from Rs. 300/- to Rs. 500/- in 1905. By the revised scale 12007/- persons who paid income-tax under the old scale, were exempted from it altogether.

On the occasion of the celebration of the Silver Jubillee of His late Highness in 1907, the scale of the income-tax was again revised, and the minimum taxable income was further raised from Rs. 500/- to Rs. 750/-. This revised scale released 3192 persons from the payment of income-tax.

Upto 1939-40, experiments were made with the minimum taxable income which, in course of these few decades covered by this book, was raised from Rs. 100/- in 1896 to Rs. 750/- in 1907—the later being in force up upto 1939-40 in which year it was raised to Rs. 2000/- Non-progressive rates were charged for the increasing income, but for each category of income, a flat rate was fixed. The following table shows the rates then charged.

Annual Income	Annual Tax	Annual Income	Annual Tax
Rs. 750 to 1000	Rs. 10	Rs. 4000 to 6000	Rs. 60
Rs. 1000 to 2500	Rs. 15	Rs. 6000 to 10000	Rs. 90
Rs. 2500 to 4000	Rs. 35	Rs. 10000 to 15000	Rs. 150
Rs. 15000 and above 1-8-0 per cent			

The present scale :—

To reduce the burden of income-tax on lower incomes and redistribute the then levy of taxation, the Government took up the revision of the then existing scale of income-tax assessment in 1939-40, and sanctioned amendments in the income-tax Act and rules incorporating the consequential changes. The then existing flat rates of income-tax were replaced by a rate based on a sliding scale, and the minimum taxable limit was raised from Rs. 750/- to Rs. 2000/-.

The rates of income-tax graduated on a sliding scale and in force at present are as under :—

Annual income					Rate
From	Rs.	2000	to	5000	Rs. 1-8-0 per cent
„	„	5001	to	10,000	3 per cent
„	„	10,001	to	20,000	4 per cent
„	„	20,001	to	30,000	5 per cent
„	„	30,001	to	50,000	6 per cent
„	„	40,000	and above		8 per cent

Besides this, a super tax (corporation tax) of one anna in a rupee was also levied on all incomes in excess of Rs. 10,000/- except from registered firms

Marginal relief :—

The principle of granting marginal relief to assesses whose incomes are only slightly higher than the maximum of the lower scale was also adopted. The assessment of income tax was made annual instead of triennial as in the past.

The object of change :—

The change in the scale of assessment was made not with the object of securing higher revenue but to make the higher incomes bear the burden according to their capacity.

Effect :—

The immediate effect of the changes in these income tax scale was to exempt about 19000 out of the total of about 24000 assesses.

INCREASE IN EXPENDITURE.

With the growth in the revenue of the State, there has been an increase in expenditure incurred by the State. The increase is as under :--

Figures in lakhs of rupees

1881	1891	1901	1911	1921	1931	1941
132·12	176·67	179·24	140·00	191·68	239·03	240·33

The increase in the expenditure of the State has been to the extent of 82% during 1881–1941, as compared with an increase of 53% in the receipts of the State during the same period.

The following table shows the main heads over which this increase is spread over.

Figures in lakhs of rupees

Heads	1881	1941
Land revenue dept.	9·49	21·15
Education	1·64	38·82
Medical dept.	1·13	7·98
Judicial	2·46	5·27
Police	6·95	15·16
Sanitation	..	1·11
Agriculture	...	6·42
Commerce and industries	...	2·96
Co-operation	...	0·79

The chief feature of the increase in expenditure is that the nation building departments of the State have grown by leaps and bounds.

The greatest increase in expenditure is shown by the education department, which has risen from Rs. 1·64 lakhs in 1881 to Rs. 38·36 lakhs in 1941.

This is an indication of the liberal and enlightened policy of the State which puts education and welfare of its subjects above all other considerations. The expenditure on medical, judicial and police departments has also risen considerably; all pointing to the fact that social services of the State have been considerably augmented. Several very useful departments like Sanitation, Agriculture, Commerce and Industries, Co-operation etc., which were not in existence in 1881 have been created and materially strengthened.

Incidence of taxation :—

The taxes generally included for considering incidence of taxation are stamps, excise, land-revenue, customs, income-tax and registration.

Land revenue incidence :—

The land revenue assessment in Baroda State is fixed on scientific lines. Numerous details and factors are considered with a view to arrive at the taxable capacity of a particular piece of land for a fixed period. The land revenue policy also takes into consideration circumstances necessitating relief.

In the year 1880-81, the land-revenue constituted nearly 70% of the total revenue. It may be repeated here that burden of taxation was highly inequitable at that time, the greater part of the burden being borne by the agriculturists alone.

As a result of the establishment of land revenue equalisation fund in 1938-39, the receipts from land revenue in a normal year is now fixed at Rs. 95 lakhs. The deficit is met from this fund and the surplus is credited to this fund.

Therefore when calculated on the Census population of 1941, the land revenue burden, distributed per capita comes to Rs. 3-4-9 at present.

Attention has also been paid to the equitable distribution of this burden. Formerly the advantages of remissions, reductions and other concessions granted by the Government accrued only to the superior holders but now the Government have ordered that similar advantages should be given to the tenants and cultivators by land-owners.

Incidence of Income-tax :—

This tax came into existence only in 1896, before which numerous small taxes, incidence of which it is impossible to calculate, wére in operation. The burden of this tax is slowly but steadily shifted from poorer classes to well-to-do classes by raising the amount of minimum taxable income. In this way about 35000 persons on whom the income-tax was first levied, have now been exempted from it and now only firms and rich persons pay this tax. The introduction of the progressive rates instead of flat rates in 1938-39 has made the higher incomes bear the burdens in proportion, thus making the burden more equitable.

Customs :—

Custom duties form another important item in determining the per capita burden of taxation. The main points of note in this connection are the customs agreement of 1936 and the opening of Port Okha in 1927. The people of the State paid Rs. 47·68 lakhs towards customs in 1926-27 to the Central Government indirectly but the Agreement of 1936 with the Central Government referred to in the chapter on industries secured a major part of these customs duties to the Baroda Government. In 1940-41, the amount that thus accrued to Baroda

Government was Rs. 33·47 lakhs. The burden of these duties paid to the Central Government, came to Rs. 1-11-10 per capita in 1926-27 while to-day i. e. in 1940-41, it is only 0-8-0. Thus the Customs Agreement has reduced the State people's per capita burden by Rs. 1-3-10.

Present per capita incidence of taxation:--

We may now study the per capita burden of taxation for the years 1926-27 when Port Okha was developed and the present policy of. reducing the burden was actively put into effect. We may then see how much reduction was affected in this burden by customs agreement in 1936 and by land revenue reduction in 1938-39 and then consider the present per capita burden.

Thus calculated the per capita burden was Rs. 8-10-8 including land revenue in 1926-27 but it fell to Rs. 6-2-4, mainly as a result of the Customs Agreement. This burden was again reduced to Rs. 5-8-10½ in 1938-39 as a result of the handsome reduction in land-revenue.

The per capita burden in 1940-41 was Rs. 6-2-1½. The slight increase over the figure of 1938-39 is the result of better realisation in land-revenue, taxes etc.

But we must not here ignore beneficient donations like the Diamond Jubilee Trust Fund and Sayaji Memorial Fund, which give to the people Rs. 7 lakhs every year. Again the following recent concessions should also be considered.

(i) Remission in favour of prant panchayats of four pies of land cess deducted as their contribution for primary education, involving a loss to the State revenues of Rs. 2·75 lakhs a year and (ii) the expenditure incurred by the prant panchayats on veterinary relief amounting to Rs. 1·00 lakh a year. The total thus amounts to Rs. 10·75 lakhs a year.

As result of these donations and concessions, the per capita burden has been lightened by Rs. 0–6–0.

Thus the net per capita burden at present, calculated on 1941 census, is Rs. 5–12–1½.

PRESENT POSITION.

During the year 1938–39, a comprehensive examination of the financial position of the State was undertaken by the Government. As a result of this examination of the budgetary position, two important measures were adopted in the year 1938–39. The first is the constitution of the State Reserve Fund. The careful management of the finances of the State for many years enabled the State to build up a reserve to meet emergencies like flood, famine etc. without disorganising the normal actvities of the Government. Between the years 1927–28 and 1937–38, these reserves were strengthened by approximately Rs. 150 lakhs. In the year 1938-39, out of the liquid assets of the State, Rs. 350 lakhs were set apart to form a reserve to be utilised for schemes of remunerative capital expenditure.

Land Revenue Equalisation Fund :—

The second is the formation of a separate Land Revenue Equalisation Fund. Land revenue forms the main source of income to the State, and seasonal vicissitudes have their repercussions on the State income. In the last decade, for example, deficient or irregular rainfall, attacks of frost etc., have unfortunately been common and Government had to grant remissions and suspensions on a fairly large scale, dislocating the budget estimates. To avoid this, a Land Revenue Equalisation Fund has been created. A scrutiny of the figures showed that the demand of the State under land revenue, could be fixed at Rs. 95 lakhs. An equalisation fund has been built up taking this as the normal figure. If the actual realisations from land revenue exceed this standard, the excess is added to the fund; if on the other hand, the receipts fall short of the standard, the deficit is made good by drawing upon the fund. To start with, the fund was credited with Rs. 50 lakhs from the savings of the State. Fluctuations under land revenue will thus cease to affect the working of departments.

Net assets of the State :—

The net assets of the State at the end of the year 1940-41 amounted to Rs. 1106 lakhs. Of these Rs. 554 lakhs represent capital invested in railways, Rs. 37 lakhs in electrical works, Rs. 48 lakhs in Okha and other port works and Rs. 16 lakhs in other concerns.

The permanent investment of the State in permanent capital works was thus Rs. 6,55,97,449 in 1940-41, and it was Rs. 4,67 65,983 in securities. The cash balances amounted to Rs. 1,87,32,038 and loans and advances amounted to Rs. 1,04,40,677; thus bringing the total net assets to Rs. 1106 lakhs.

The number of memorial and charitable funds was 286 and the amount of endowment was Rs. 18·4 lakhs.

To sum up, the financial position of the state may be conidered highly satisfactory.

CHAPTER 21.

ECONOMIC LEGISLATION

Laissez-faire :—

The functions of the State have been a subject of controversy among the economists from very early time. The doctrine of laissez-faire, according to which the functions of the State were limited to the protection of the private property and individual liberty, remained in vogue for a long time but the progress of thought in the sphere of economic science led to important modifications in the old doctrine and by the end of the nineteenth century, it was completely discarded even in India. Everyone now admits the legitimacy of State intervention into matters economic and regulation of economic life.

Economic Justice :—

Almost all the Governments now consider it a part of their duty to formulate laws for the regulation of economic life of the community and for mitigating evils resulting from unrestrained competition. The Government of the Baroda State being one of the most progressive one, has also undertaken this task of securing economic justice to the people and has enacted certain laws. The economic legislation in Baroda State is mainly the product of the present decade viz., 1931–40; during which the question attracted the attention of Sir V. T. Krishnamachari, the Dewan, who has shown continous zeal for improving the economic condition of the masses.

Legislation :—

The economic legislation in Baroda State can be grouped into two parts (1) Tenancy and (2) Debt Legislation.

Tenancy Legislation.

The evils of rack-renting are very notorious in India. The tenant who cultivates a piece of land on the basis of rent has to pay a very heavy rent. Besides this, he is not sure that he will be allowed to cultivate his holding next year. This makes him indifferent to all the improvements in his holdings which leads to the continous deterioration of land. The owners themselves are seldom interested in the improvement. In order to check these evils it is necessary that the State should enact such laws.

The Baroda State has the following laws for the protection of the tenants :—

(1) The Rent Regulation Act.
(2) The Ankadia Villages Tenants' Act.
(3) Backward Classes Khata Land Protection Act.

The Rent Regulation Act :—

The Rent Regulation Act was passed on the 1st

March 1934 to regulate rents payable by tenants of the backward class to superior holders, and was first applied to Vyara, Mahuva, Songadh and Mangrol talukas of the Navsari district in 1934. Later in 1936 it was extended to Sankheda Mahal and 30 villages of Tilakwada peta mahal of Baroda district.

1934-35		1935-36		1936-37		1937-38		1938-39		1939-40	
Total	Disposal	Total	Disposal	Total	Disposal	Total	Disposal	Total	Disposal	Total	Disposal
6942	6725	2936	1167	1285	2616	1040	1158	1536	1371	1763	1949

The above table indicates that as years roll on, the number of cases go on decreasing. They were 6942 in 1934-35 and 986 in 1940-41. The figures of disposals include the disposal of the cases in arrears also. The majority of the cases were for fixing up rent by the tenants and secondly for arrears of rent by land holders.

The working of the Act during the last six years has shown one important result. Gradually superior holders have themselves, in many cases, voluntarily fixed reasonable scales of rent based on the provisions of the act. It may also be noted that in a large proportion of cases Naib Subas have fixed rents with the consent of all parties.

The Ankadia Villages Tenants Act :—

This Act was passed on 12th April 1934. It is applicable to 33 villages in the State. The rules under the Act were promulgated on 20th September 1934. The object of this Act is to safeguard the interests of the tenants in the Thakarati villages of the State and to regulate the relations between the Ankdedars of such villages and their tenants.

Table showing the result of working of this Act.

Applicants	1935 -36	1936 -37	1937 -38	1938 -39	1939 -40	1940 -41
1. Thakores ...	11	77	30	13	2	2
2. Tenants ...	155	74	14	..	4	..
Total	166	151	44	13	6	2

The decrease in the number of applications from year to year is a happy sign of the growing amicable relations between the tenants and Ankdedars.

The Backward Classes Land Protection Act :—

This Act has been applied to Songadh, Vyara, Mahuva and Mangrol talukas of Navsari district and to Sankheda, Tilakwada, Dabhoi and Vaghodia talukas of Baroda district.

The Raniparaj people and other backward classes are given protection under this Act. The object of the Act is to prevent the land of such Khatedars passing into the hands of others. Under the Act, they are debarred from transferring their lands without permission of recognized authority. Side by side with this, Co-operative Societies are organized for affording them necessary finance.

The effects of the Act have been beneficial to the backward classes on the whole and the tenants have now learnt to approach the proper authority for removal of their grievances.

DEBT LEGISLATION

The huge indebtedness under which our agriculturists have to labour is a great impediment in the way of their progress and effective reform through the introduction of modern and uptodate methods of cultivation. Several attempts have been made to access the indebtedness of Baroda Agriculturists, a detailed description of which has been given in the chapter on Co-operation.

Acts in force :—

Early in the present decade, the Government undertook a comprehensive programme of Debt Legislation; which now comprises the following Acts :—

(1) The Agriculturists' Debt Regulation Act.
(2) The Debt Conciliation Act.
(3) The Record of Rights over Lands Act.

The Agriculturists' Debt Regulation Act :—

This Act came into force on 26th December 1935. It was introduced to give relief to indebted agriculturists with due regard to the interests of creditors. It enables courts to examine the history of the whole debt, reopen transactions, and to fix the amount due on equitable considerations.

Scope :—

The Act affords relief to agriculturists whose income from land is Rs. 750 a year or below. Where an agriculturist derives income from sources other than agriculture, such income should not exceed one third of his total income and the total income itself from all sources should be Rs. 750 or below a year.

Working :—

The following table gives the details of the working of the Act during the five years for which it has been in operation :—

Year	Nnmber of suits received	Number of suits disposed of
1936—37	7608	5316
1937—38	6122	6469
1938—39	6157	5712
1939—40	5437	6302
1940—41	5525	5344

Results :—

The majority of the cases received were disposed of by way of compromise. Every year about more than 2000 cases are disposed of in this way. The second in importance are the cases in which payment by instalments has been ordered. The cases in which reduction in the amount of claim or interest is made occupy the third rank. The detailed examination of the suits shows that Patidars and Kolis are the foremost to avail themselves of this Act.

The Debt Conciliation Act :—

Of even greater importance as a contribution to the solution of the problem of Agricultural Indebtedness is the enactment of the Debt Conciliation Act in 1936. The primary object of the Act is to reduce the burden of agricultural indebtedness and to effect settlement of agriculturists' debts amicably.

Scope :—

The Act is applicable only to those debtor agriculturists whose annual agricultural income does not exceed Rs. 750 or those out of whose total income of Rs. 750, the agricultural income is not less than Rs. 500. The amount of debt for which conciliation is sought should not be less than Rs. 100 and more than Rs. 25000. The Act is at present applied to certain selected areas : Sankheda, Sinor, Karjan, Mahuva, Kodinar, Dhari, Mangrol, Vyara, Patan, Harij, Amreli, Khambha, Songadh and Gandevi talukas. Recently it has been applied to Dabhoi, Tilakvada, Waghodia, Kamrej and Palsana talukas as it is intended to extend its operation to areas covered by the operations of land mortgage banks.

Debt Conciliation Boards :—

The Debt Conciliation Boards set up under the Act consist of a president, with usually four members–two from the money-lender class and two from the landholder class. The Vibhag Naib Suba works as a president of the board which meets once or twice a month according to the volume of work. The board examines the accounts produced and attempts to compose debts amicably. If both parties fail to come to a settlement, the board files the application. If the creditor refuses to accept a settlement considered reasonable, a certificate is issued to the debtor and the creditor loses his right to costs and to interests exceeding 6 per cent in subsequent civil suits. If the creditor fails to present himself or to produce his accounts within the given time, the debt becomes extinguished.

Working :—

The figures in the following table show the results of the working of this Act during the last five years.

Year	Number of cases dealt with	Aggregate claim settled	Sum fixed by conciliation	Percentage of reduction
1936—37	104	Rs. 27834	Rs. 19523	32
1937—38	314	„ 175862	„ 120222	36
1938—39	471	„ 223552	„ 145584	35
1939—40	361	„ 95257	„ 59282	37·8
1940—41	333	„ 75000	„ 58000	22·7

RECORD OF RIGHTS OVER LANDS ACT

The last but not least is the Record of rights over lands Act. Before a thoroughly efficient system of Agricultural Banking is introduced, it is necessary that there should be available a complete record of land rights and titles. The security that a farmer can give for a loan is that of land and unless a clear and definite history of previous encumbrances and liens is available, it is dangerous to advance large loans against its security. The Sawkar who lives in the village and who has permanent clients handed down from generation to generation may have easy means of knowing the titles, but an outsider and specially an institution like a Bank can have no means of readily acquiring the necessary information under the existing system of land holding and ownership. The land may remain on the Government records on the name of one member while as a matter of fact the real ownership may have passed to several others by way of inheritance, sale or mortgage. This information is known to a few persons in the village but is difficult to be obtained by an outsider. Therefore it has been found difficult for Agricultural and Co-operative Banks to advance loans freely.

In all the European countries where agricultural banks are opened, complete Record of Land Rights is to be found and on their strength the mortgage banks are doing good, safe and large business. It was therefore highly desirable that steps should be taken to establish a complete Record of Land Rights. Hence the Record of Rights over lands Act was passed. It has been applied only in Karjan taluka of the Baroda district. The question of extending it to other parts of the State is being examined.

Conclusion :—

The working of the various Acts has been satisfactory and congenial to the interests of both the debtors and creditors or the tenants and the land-lords. It is necessary to emphasize here the fact that these enactments have been necessitated by the abnormal conditions of the decade 1931-41 owing to the widespread depression that started in 1929 and hence this legislation is temporary for meeting conditions of exceptional hardship. " Government expect that with a return to normal level in prices, the necessity for interference with the ordinary credit machinery will cease to exist."[*]

[*] Baroda Administration Report, 1938-39.

CHAPTER 22.

CONCLUSION.

☆

A word in conclusion. The process of economic evolution of the State can never be complete and as such only the frame work and its tendencies liable to modifications could be sketched roughly.

It will, however, be evident from this sketch that the delicate thread of economic evolution grows stronger and tougher as years roll on. Much has been done during the years between 1871 and 1941–enough to indicate progressive evolution of the economic life of Baroda.

The first entry of the Gaekwars in Baroda dates as far back as beginning of the 18th century. The initial one and a half century saw the steady establishment of the Gaekwar's rule. It was during the august rule of His late Highness Sayajirao that the wheels of progress were definitely and consciously set rolling, and the last 15 years are really noteworthy in their achievements.

The population of the State during these seven decades increased by 38 percent, the highest increase being recorded by decades 1921–31 and 1931–41 and the greatest fall in the decade 1891–1901. Literacy has also made good progress, the proportion having increased from 1C·38 to 32·8 per cent among the males and from

0·39 to 12·14 per cent among the females. The birth rate has increased, the death-rate has fallen, the number of survivors has enormously increased and there has been a proved advance in the average age of the individual, all this pointing to the improved conditions of living, which in their turn depend on economic condition.

Agriculturists are the backbone of the country and the State's efforts to improve their lot are really marked-especially during the last decade when the peasantry needed help and relief the most. The very fact that even a rudimentary and by no means a complete sketch of the activities of the agriculture department occupies no less than about 65 pages of this book indicates the extent of efforts made by the State to better the conditions of the farming community.

To quote but a few instances : 15 percent more land has been made available for cultivation between 1871 and 1941 and in all 90 percent of the total cultivable land has been brought under the plough ; a complete and equitable system of land revenue assessment has been established and the percentage of land revenue to the total receipts of the State has fallen by about 50 percent of what it was in 1891 ; there are now ample facilities for agricultural education and research and a nucleus for pure and improved seeds for every crop suitable to different tracts of the State has been provided; several new agencies have been created to bring improved methods of cultivation to the very doors of the agriculturists; rotation of crops and double crops are the established practices and irrigation facilities are being speedily developed; fruit cultivation has now become an integral part of the agricultural programme and several thousands of acres are now employed for fruit cultivation.

As years go by, fresh problems of land and its cultivation such as the diseases of the crops, the gradual washing away of the soil, settlement of our roving dairyman-the Rabanes-make their appearance. These problems are anticipated and met adequately.

Industries of the modern type were quite unknown to the people of Baroda in 1871. But a number of them are now firmly established, thanks to the pioneering efforts of the State. The number of cottage workers has regretably decreased from census to census owing to circumstances over which it was difficult to establish control; but the fact that about 23 per-cent of the population i. e. about 7 lakhs of people are at present engaged in trade, transport and industry is by no means a mean achievement. In 1871 land revenue was almost the single source of revenue to the State; now customs, railways etc. contribute fairly large amounts to the State exchequer and allow the administration to lighten the agriculturists' burden This, as we have seen, the people owe to the progressive character of the State which has resulted in considerable expansion of development departments and development of Port Okha.

The co-operative movement, which has been declared a failure in many parts of India, has not proved so disappointing in the State, though discouraging incidents are not unfamiliar even here. The movement has been broadbased, directed into almost all known and well tried types and vigorously financed by the State. About 1300 co-operative societies of one kind or the other have come into existence during the course of last 37 years. Though much remains to be done, the facts that about sixty seven thousand people have actually joined the movement, that lakhs of rupees have been placed at the disposal of the rural masses and that the co-operative principle is made use of in many aspects of corporate life indicate the great influence that the movement has had on the people.

The finances of the State show remarkable solidarity. A study of the constituents of the receipts and disbursements of the State in 1881 and 1941 shows that new sources of income have been found as a result of the development of natural resources of the State, the amount in the civil list shows considerable reduction, a remarkable decrease has been effected in the contribution made by land-revenue to the total receipts of the State and the development activities have been liberally nourished. The gradual but significant increase in the minimum taxable income which has been raised from Rs. 100 in 1896 to Rs. 2000 in 1940 is also worth noting. The burden of taxation is now far lighter and more equitable. The sound finances have been made all the more stable by devices like the Land Revenue Equalisation Fund and the State Reserve Fund, not to talk of wise and helpful investments of surpluses.

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